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ABSTRACT

The extent to which personal and academic factors are important in college admission decisions was studied in 1978, based on data on 25,000 applicants to 9 colleges (Colgate University, Williams College, Ohio Wesleyan University, Kenyon College, Kalamazoo College, Occidental College, Hartwick College, University of Richmond, and Bucknell University). It was found that each college placed primary emphasis on academic factors (three times as much weight as personal ratings). High school rank and test scores were weighted about equally. In order to examine the effect of personal qualities on selection decisions, residual selection rates were computed for a number of different characteristics. At the most selective institutions various personal qualities played a preferential role in selection decisions. Minority status had the largest residual selection rate of any characteristic. Other background characteristics with positive residuals were those that tended to indicate some degree of affiliation with the college (e.g., alumni children). The findings contradict, however, any assumption that socially or economically privileged groups received preference in selection decisions. Personal qualities seemed to come into play mostly when admission was uncertain or unlikely. Attention was also directed to the effect of self-selection by students on application and college selection, the way that characteristics of freshmen classes differ by college, the way that personal qualities relate to success and persistence in the freshman year, and the research literature on admissions. A questionnaire and application forms and bibliography are appended. (SW)

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Personal Qualities and College Admissions

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Preface

This book reports the results of the first phase of a cooperative research project that is unusual in two respects. First, it provides a more comprehensive and detailed analysis of the admissions policies and practices of a group of institutions than has been available up to now. In addition, the project breaks an old tradition in this report of initial results: Whereas colleges routinely insist on anonymity as a condition of participating in any cooperative study concerned with sensitive policy issues, the nine participating institutions decided to disclose fully a wealth of information about their applicant pools, their individual practices in admissions, and the characteristics and experiences of their freshmen. The result is a fascinating and intimate view of how nine selective colleges admit their students.

The nine institutions and their representatives (see page xi) deserve much credit—not only for their substantial work to date on this project but also for their willingness to undertake it in the first place and their forthrightness in laying out for all to see and examine facts that are ordinarily closely guarded. This action is in keeping with a new spirit of openness in college admissions, worthy of much respect, although seldom practiced in such an exemplary manner. Needless to say, their decision to participate in such a study and to open their books on the results shows dramatically how much these colleges value the integrity of the educational process and the importance of seeking ways to improve it.

This book was drafted under the assumption that the colleges would be anonymous. Each was randomly assigned a code letter and was so listed in the various tables. When the colleges decided to identify themselves in the report, abbreviations were substituted for code letters, which accounts for the fact that in most instances the colleges are listed in no apparent order.

Even a brief perusal of the book will reveal that a number of tables are included in the text itself and in the Appendixes. Such extensive data are included because the admissions process is examined here in its full complexity, which requires several different types of analyses. Chapter I is intended to assist readers in gaining a quick overview of the study and identifies sections for detailed examination.

The complexity of the topic prompts several caveats. In the eyes of some, any effort to characterize the personal qualities of a human being

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is doomed to failure. It is certainly true that all of the subtleties that make individuals special and unique can never be captured, nor can it be hoped to have the answers to all the questions surrounding a complicated process. Rather than dismiss any effort to objectively analyze the selection process, it is hoped that doubtful observers will conclude from this study that it is possible to learn a good deal more about admissions than we currently know.

On the other hand, there is the danger of overinterpretation by placing undue emphasis on isolated facts or unwarranted faith in the results of one study. These institutions are not unrepresentative of selective private colleges; but there are only nine of them, they do differ one from the other, and they do not necessarily reflect practices in other types of institutions. Facts have to be looked at in a broader context, and even these nine colleges are not exactly the same institutions they were when the initial data were gathered some three years ago. Note that the authors speak for themselves, not for the colleges, the Personal Qualities Steering Committee, or the College Board and Educational Testing Service, both of which sponsored the study.

It is also necessary to explain the unique role of the project steering committee. It was composed of one representative from each of the nine institutions. These individuals supervised the work on the nine campuses. The committee as a whole was responsible for policy decisions in all matters concerning student and institutional interests, and prior review and approval of all work plans and project reports. In both capacities, individually and as a committee, their work was invaluable. Many others on the various campuses provided greatly appreciated and extensive service to the project in rating applicant folders, feeding the project's great appetite for data, and carrying out many local tasks. The following people made especially important contributions: Thomas Anthony, Scott Fahey, Barbara Lasher, Philip Smith, Karen Stewart, Betsy Henkelman, Anne Grube, and Kennon Garofalo.

The coauthors of this book were responsible for the study design, analyses of the data, and drafting the manuscript. Hunter Breland prepared Chapters 3, 4, and 7 and made very substantial contributions to many aspects of the study as associate project director through June 1980. Warren Willingham prepared the remaining chapters and is responsible for the overall project. Shula Minsky and Philip Griswold served successively as senior research assistants for the study and were largely responsible for carrying out the data preparation and processing.

A number of other staff have made important contributions to the

Personal Qualities Project, either in earlier years or in the second phase of the work. David Freund, Paul Holland, Douglas Jones, Bruce Kaplan, Alfred Rogers, William Van Hassel, and John Young have provided valuable advice and assistance in data processing and analyses. Linda Johnson has handled most competently the financial and administrative aspects of the project. Debra Smolinski, Jessie Jones, Francine Mittleman, and Bernice Gall gave their valuable competence to the substantial secretarial tasks. Several temporary staff members have made useful contributions to this work, especially Shari Glatt and Rose Schwenzer. Joseph Morsicato of the College Board staff did an outstanding job editing the manuscript. On behalf of the steering committee, the College Board, Educational Testing Service, and my coauthor, I express gratitude for this assistance, which has been so vital to the success of the project to date.

A number of colleagues offered good ideas and counsel along the way or reviewed all or parts of this book in manuscript, even though they may not necessarily agree with specific interpretations or views expressed here. They include Leonard Baird, Patricia Casserly, William Ihlanfeldt, Rex Jackson, Ted Marchese, David Riesman, Donald Rock, Carole Slaughter, and James Wickenden and are due special thanks for their help.

As the Personal Qualities Project moves well into its second phase, it is particularly appropriate to express appreciation to William Turnbull, who first suggested the need for more work in this area, and to the College Board and Educational Testing Service for their sponsorship. James Nelson and Winton Manning, cognizant officers for the project for the two organizations, respectively, attended several meetings of the steering committee and offered valuable advice and support. Winton Manning, in particular, deserves recognition and gratitude for his central role in encouraging the project several years ago and for his continuing interest and substantial help as it has moved along.

At this writing, the steering committee is making plans for the collection of information about the performance of the participating students in their senior year. Thanks are also extended to those students for their assistance in this work. The project staff hopes to report faithfully the full diversity of the students' accomplishments in college, and thereby improve our understanding of the relevance of personal qualities to admissions and the educational process.

Warren W. Willingham
Personal Qualities Project Director

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A Brief Overview

Aside from academic ability, what counts in gaining admission to a selective college? Do colleges give any preference to the applicant who has an unusual talent or has accomplished something noteworthy outside the classroom? Are admissions decisions swayed by a striking character reference or signs of outstanding maturity in an applicant's personal statement? What about coming from a prominent family or a prestigious secondary school, or being a member of a minority group or the daughter of an alumnus? How much weight do such factors actually have in admissions? How are they related to institutional objectives and a student's educational development and success in college?

Who hasn't wondered about such questions? Surprisingly little is known about admissions because there has been little informative research and most colleges have been traditionally somewhat reluctant to disclose the details of selection procedures. Many a nervous parent has tried to decipher the basis for admissions decisions, but the issues are far more consequential than merely satisfying curiosity. Most people consider the selective college to be a good route to a superior education, a good job, and the advantages that follow. There are sensitive issues of equity in admitting the most deserving students, important benefits for educational effectiveness in selecting students who are more likely to succeed, and significant social consequences in what young students are told about what is important in order to get ahead in the world.

This book reports on a major study of what is important in admissions. The study is unique in several respects: its detailed analysis of admissions decisions, the direct comparison of stated institutional policy with the actual outcome of the selection process, the extended follow-up to determine in what ways different types of students succeeded or not, and an open reporting of findings for individual colleges that is rarely, if ever, seen in a study of this sort. Because we have attempted to look very broadly at student characteristics in the admissions process, this report of the study poses problems. We have felt it necessary to include a great deal of data. While our intention has been to write a largely nontechnical and generally comprehensible book, we have not avoided difficult topics in an effort to make superficially simple what is inherently complex. There is a logical transition to the chapters, but the book is not structured like a novel and certainly does not have to be read like one.

In this first chapter, therefore, we have tried to provide a brief overview of the whole—partly to help readers grasp quickly the most important features of the study and its results, and partly to describe the contents of successive chapters so that each may be examined more or less closely as the reader's immediate interests dictate. For this overview we have paraphrased numerous paragraphs from subsequent chapters. We trust that the usefulness of this introductory overview to the reader will compensate for any redundancy that is thereby created.

Chapters 2, 3, and 4 provide background. In Chapter 2 we argue the case for personal qualities in admissions and the need for research of the type reported here. In much abbreviated form the rationale is as follows. Selective colleges typically draw their students from a wide geographic area. In the course of recruiting students and considering applications, these colleges gather a great deal of information in addition to purely academic evidence. Qualifications of applicants may include special talents and developed competence, noteworthy achievements and accomplishments, individual experiences and backgrounds as well as interests and goals—all of which one might regard as personal qualities. This information comes to the college in the form of personal statements, references, and responses to questionnaires.

In attracting and selecting applicants, colleges put much emphasis on academic performance as reflected in previous grades and test scores, but historically there has been strong argument and disposition for considering other personal qualities as well; that is, most colleges try to enroll students who will do well academically and also make a contribution to the institution, bring unique skills and interests, add cultural diversity and different points of view, help maintain important

institutional ties and continuity, and also fit reasonably well the particular types of programs that the college offers. How important these various considerations are to individual colleges depends upon their role and objectives and the conditions of their competitive position. But individual institutions and agencies that are involved in admissions have always recognized the importance of personal qualities in college selection. Is that tradition still relevant?

We are undergoing important changes in college admissions. Demographic, social, and legal trends suggest, if anything, more emphasis on personal qualities in admissions in the 1980s. The impending downturn in the number of 18-year-olds will surely place increased emphasis on recruitment and the use of a variety of applicant information in order to attract a student body that fits institutional strengths and objectives.

Consider these social factors: affirmative action is seen by many as a social imperative, lifelong learning is widely urged, economic stringency seems likely to continue, consumer expectations about education are increasingly important. These trends reflect the need to serve students with diverse characteristics and interests. All bear on retention, which many feel is partly the reflection of a successful admissions policy. Recent court decisions show the desirability of using several types of information in admissions and emphasize institutional responsibility to rationalize and validate the information used.

Colleges thus appear to be entering an era in admissions characterized by a less exclusive emphasis on academic competence and a more balanced concern with academic standards and the wide range of personal qualities relevant to recruitment and retention as well as to selection. An important need is to strengthen the use of these qualities in admissions. The purpose of this study is to advance that objective through achieving a better understanding of the relevance of personal qualities and how colleges might assess such qualities more effectively.

Chapter 3 summarizes a large body of research literature on various types of measures sometimes used in admissions as supplements to test scores and grades. Several types of measures (biographical data, recommendations, interviews, interest measures, personality measures, peer ratings, and personal statements) are evaluated with respect to their reliability, validity, and acceptability. Our major conclusion from the research literature is that personal qualities suggest more promise in theory than has been achieved in practice. This is partly because such measures have been researched to a much lesser extent than traditional academic measures. Biographical data (background characteristics and personal accomplishments) appear to be the most acceptable and generally promising class of measures. Recommendations and interviews

are often an accepted part of the admissions process, but their reliability and validity seems most open to question on the basis of research evidence.

The organization of the current study and the research procedures are described in Chapter 4. Beginning in late 1978 data were collected on 25,000 applicants to the nine participating colleges, all of whom use exclusively the Common Application form. Data on that form were supplemented by questionnaires and other information collected from the colleges and their students. The 140 measures used fall into nine categories: data from the application process, academic achievement, personal achievement, background characteristics, college ratings of applicants, educational goals of students, reasons for college choice, educational/career interests, and freshman experience and performance. In the fall of 1979, 5,000 freshmen enrolled in one of the nine colleges. The study plan calls for following this group through the senior year, but this book reports on the students only through the freshman year. Detailed results are reported in Chapters 5 through 9 (plus supporting tables and technical material in the Appendix, as cited in the text).

Chapter 5 describes the personal qualities that characterize the applicants and how those qualities were rated in the admissions office. Some colleges had far more academically outstanding applicants than others, but every college had among its applicants a substantial number of students with noteworthy records of personal achievement. Consequently, an important finding of this study is that the talent pool for each college is quite extensive if the college is willing to consider, in addition to academic measures, such areas of personal achievement as leadership, athletics, community service, and creative endeavors (e.g., art, music, drama, writing).

Chapter 6 addresses this key question: To what extent were personal and academic factors important in deciding who was admitted? The proportion of applicants accepted varied widely at these nine institutions, but each college placed primary emphasis upon academic factors, as was its stated policy intention. Overall the colleges' *academic* ratings of the applicant folders received about three times as much weight as did their *personal* ratings. The two main academic factors—high school rank and test scores—were weighted about equally. These two measures predicted admission decisions fairly well, but it was evident that a number of other measures also came into play. Furthermore, there was no indication that any of these colleges were using a cutoff score on academic measures.

In order to examine the effect of personal qualities on selection decisions, *residual selection rates* were computed for a number of differ-

ent characteristics (i.e., the actual selection rate for a particular type of student minus the selection rate that would be expected on the basis of the high school rank and test scores alone). A number of interesting facts emerged from this analysis.

At the most selective institutions various personal qualities played a preferential role in selection decisions. At colleges that rejected fewer applicants there was much less preferential admission based upon personal qualities. Strong affirmative action programs were confirmed by the fact that, on the average, minority status had the largest residual selection rate of any characteristic. Other background characteristics with positive residuals were those that tended to denote some degree of affiliation with the college (e.g., alumni children). Our findings contradict, however, any assumption that socially or economically privileged groups received preference in selection decisions.

It is widely assumed that students can enhance their chances of admission to a selective institution through noteworthy extracurricular accomplishments. To our surprise, we find that our data offer little support for that assumption. Students with unusual accomplishments received some preference in admissions, but the advantage was small and affected relatively few applicants.

The campus interview was found to be especially interesting. Coming to the campus for an interview did not necessarily enhance the likelihood of admission, but in some colleges, those few applicants who succeeded in having an "outstanding" interview did clearly get some preference.

One of the most provocative analyses came from separating the applicants in each college into three groups: those who were not likely to be accepted, those who were likely to be accepted, and a middle group for whom admission was uncertain. The data confirmed our suspicion that the selection process is very different for these three groups and that personal qualities come into play mostly when admission is uncertain or unlikely. It appears that background characteristics (e.g., alumni ties, minority status) form a basis for affirmative admissions preference in the unlikely or uncertain categories. On the other hand, evidence of personal achievement (e.g., leadership, outstanding school references) appears to be used mainly as a tie breaker among students with similar academic credentials where the student's likelihood of admission is about fifty-fifty.

Our data indicate that admissions practices do not always correspond with policy intentions of institutions. In particular, these institutions gave much less weight to personal achievement than their policy statements would indicate, and there was often lack of agreement be-

tween the amount of weight a college intended to put on a particular measure and the degree of emphasis it received in actual selection decisions.

Following this analysis of the dynamics of institutional selection, we examine in Chapter 7 the ways in which self-selection by students determines who applies to and who enrolls in a particular college. Three factors had a very large role in determining where applicants apply: academic performance, geographic mobility, and financial need.

Five variables played a particularly significant role in determining whether or not the accepted students actually enroll: high school rank and test scores (high-ability students being less likely to enroll), having come for an interview, being a local resident, or having alumni ties. Using these five measures to establish residual selection rates for other groups, we found that students receiving aid were more likely to enroll, whereas minority students and graduates of private schools were less likely to enroll.

Once the students were on campus, we could address this question that appears in Chapter 8: How do the characteristics and experiences of these freshman classes differ from college to college? Overall the profile of personal characteristics of the 5,000 entering freshmen was strikingly similar to the profile of the 25,000 applicants. It appears that the particular personal qualities of the freshmen who enroll at these institutions are determined to a considerable extent by the self-selection process that creates the original applicant pool.

These nine freshman classes varied far more in academic achievement than in other measures of personal achievement—confirming again that self-selection and institutional selection primarily reflect stratification on academic achievement. There were, however, clearly discernible differences among the freshman classes in such personal orientations as intellectual and practical goals, creative and athletic skills, and social and leadership interests. In the spring of the first year, freshmen were more often satisfied than not with their progress toward educational goals, although there were significant differences from college to college with respect to particular goals. Two were a frequent source of disappointment: the development of intellectual skills and the exploration of career options.

A final and critical question is addressed in Chapter 9, namely, how were personal qualities related to success and persistence in the freshman year. Our measures of personal achievement in secondary school were only slightly associated with earning higher college grades than would be expected from rank and test scores. Typically these personal measures were better predictors of which students were nomi-

nated by their peers as successful freshmen. Two measures that appear to hold promise were the quality of writing on a student's personal statement and "follow-through" in areas of personal accomplishment.

Freshmen rated very highly as applicants by colleges often received substantial preference in admissions, but students so identified were not likely to achieve higher grades than would be expected from school rank and test scores, nor were they more likely to persist to the sophomore year. High ratings by admissions staff were consistently related, however, to being nominated as a successful freshman by peers.

There were variations from college to college, but overall the validity of high school rank and test scores for predicting grades was about equal and corresponded quite closely to their relative weight in selection decisions. Personal achievement measures were neither a useful substitute for nor a supplement to rank and test scores in predicting grades. Within individual colleges persistence to the sophomore year was only slightly related to academic performance in college and was remarkably unpredictable on the basis of any preadmission measure. Since the persistence rate varied widely from college to college, the best way to predict the likelihood of dropping out was to know where the student enrolled.

We were not able to predict which freshmen would be generally satisfied with their progress at the end of the freshman year. However, satisfaction with *particular* goals was predictable to some degree, and there were significant differences from college to college in the extent to which students were satisfied with their progress in different areas. Furthermore, some types of dissatisfaction were more related to dropping out than were others.

When the freshmen in the study nominated those peers they considered successful, it appears that they picked good students who were also hardworking, well-organized achievers in other areas. This "success" criterion was related to a clearly different pattern of earlier achievements compared with those measures that predicted grades. Furthermore, personal ratings by admissions staff contributed substantially to predicting who would be nominated by peers but not who would make the dean's list. We see special significance in this finding and wonder whether the faculty's nominations in the senior year will show a similar pattern of relationships.

What do we conclude from these results? Chapter 10 provides a more detailed summary of findings, gives our main impressions of this study, and offers some recommendations for strengthening the use of personal qualities in admissions. Admission to these nine colleges appears to proceed in large part in a reasonable manner. While the colleges

and their situations vary, all give major attention to academic achievement and most give a significant amount of attention to personal qualities. We do argue, however, that there is considerable room for improvement and that paying due attention to the personal as well as the academic side of learners will best serve student as well as institutional interests.

The following chapters demonstrate, we believe, that some personal qualities are related to success, some have intrinsic merit in their own right, and some are demonstrably related to important institutional objectives. Our data confirm the importance of traditional measures of academic competence; the findings also confirm, we believe, the important supplementary role of personal qualities. So our assessment is largely positive regarding the possibility and the benefits of the greater use of personal qualities in admissions. With important caveats and cautions, we urge this broader view of applicants in Chapter 10 and cite four needs in particular.

A primary need, we believe, is to improve the salience of personal qualities in admissions through steps such as clarifying college policies as to how much weight particular characteristics and types of achievement should have in recruitment and selection, describing those qualities on application blanks in such a manner that they are clear to students and college staff, emphasizing the value placed on evidence of persistent effort and concrete accomplishment by students, improving the focus and usefulness of the personal statement, and continuing more research on and further training in the assessment of personal qualities so as to ensure reliability and fairness.

A second need is to strengthen recruitment as an instrument of institutional policy. In the coming decade fewer and fewer colleges will be able to effectively shape their student bodies through selection policies. Recruitment strategies will be the main hope for doing so. We urge that colleges focus more attention on what kinds of students can profit from their programs. They should also entertain seriously the possibility of identifying particular patterns of student interest, preparation, and accomplishment that are consistent with institutional strengths and that might deserve special priority in recruitment.

There is also a need for better management tools in carrying out policy. This study demonstrates how difficult it is for an institution to know whether it is actually carrying out admissions policy as intended. We recommend that wherever possible colleges use follow-up techniques such as those suggested here to monitor selection policies, enrollment yield, and subsequent student performance as they relate to personal qualities of particular concern to the institution.

Finally, we describe in Chapter 10 what we see as a need for more emphasis on the developmental function in admissions. It is important that selective institutions maintain academic standards by admitting students who are well prepared and reasonably likely to succeed; we think it is equally important to view the admissions process broadly as a strategy for attracting and effectively serving students whose specific talents, preparation, and goals necessarily vary. We have outlined steps institutions might take in implementing a developmental model of admissions. In so doing, we have urged that student development must include personal growth as well as enhancement of academic competence and knowledge in core subjects. The two most important unmet educational needs in the view of students in this study are the development of intellectual skills and the clarification of career options.

This brief overview is intended to provide a context for approaching the following chapters and to stimulate interest in doing so. We have only touched upon the highlights and these are, of course, our personal impressions. We urge critical reading and careful examination of the extensive data contained here. More than anything else, we hope to encourage more attention to these matters on individual campuses.

2

The Case for Personal Qualities in Admissions

Educational programs in colleges and universities differ widely as to their objectives, their character, and their standards. Admission to those programs also varies a great deal. While only a few colleges are highly selective, practically all exercise academic selectivity directly or indirectly either through the admissions decision itself, selectively admitting students to particular programs, or efforts to perpetuate or change the self-selected applicant pool.

In the minds of students and in the view of most colleges, there has always been a heavy academic emphasis in admissions and properly so. Consequently, traditional academic measures such as rank in secondary school and the standardized admissions test play an important role in admissions and in related guidance and recruitment activities. On the other hand, those involved in admissions work have always cautioned against undue reliance on any one or two measures and have urged careful attention to a broad range of relevant applicant characteristics.

Furthermore, the fundamental changes in college admissions now taking place make it all the more important to take a broad view of student characteristics. This chapter presents the case for strengthening the use of personal qualities in admissions. Doing so will assist measurably, we believe, in serving vital social and institutional interests in the 1980s—particularly in helping to maintain educational effectiveness,

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enrollment, and accountability. In arguing the case for the improved use of personal qualities in admissions, we examine first the rationale for doing so and then suggest areas in which personal qualities could be used more effectively.

What are personal qualities? Personal qualities is a convenient way of referring to those student characteristics that are not primarily academic in nature but are, nonetheless, potentially important in the admissions process. These include special talents and developed competencies, noteworthy achievements and accomplishments, and individual experiences and background as well as interests and goals.

Personal qualities also include character and commitment, but we do not mean to suggest that colleges need personality tests to admit students. The problems with personality tests have been well documented (College Board 1963; Kendrick 1964). Indeed, in thinking of personal qualities that go beyond academic competence, it is doubtful that conventional tests are appropriate at all.

Determining the relevance of personal qualities in admission to a particular college is mainly a matter of considered judgment by the staff and faculty of that institution. The need to strengthen the use of personal qualities is primarily a need to better inform that judgment. This means achieving a better understanding of what those qualities are, why they should be used in admissions, how they can be reliably evaluated, and how wider use of such qualities can be encouraged.

There are two lines of argument for strengthening the role of personal qualities in admissions. First, there is the traditional and generally accepted argument for supplementing conventional measures of academic development with other relevant information. Then there are new arguments based on important changes in the nature of admissions and society itself. It is useful to consider these lines of argument in turn.

THE TRADITIONAL CASE FOR PERSONAL QUALITIES

First, we need to consider briefly the role of academic credentials because the primary basis for selection has almost always been academic achievement and ability. That is, personal qualities are typically evaluated in the context of academic qualifications. Similarly, in selecting colleges, students are keenly sensitive to academic demands though many other attributes of the institution or program also come into play. The traditional academic measures—secondary school rank and admission test scores—seldom determine whether or not a given student goes to college. Rather they do tend to determine whether a student attends

a college or pursues a program that is academically very demanding or less demanding.

There is a tremendously broad range from college to college with respect to average academic ability of the student body (Darley 1962; Hills 1966; Willingham 1974). This unplanned but persistent stratification is a very basic characteristic of American higher education. It permits a unique balance between opportunity and excellence—a balance that is effective because students are more likely to be challenged at their individual level of development.

The traditional academic measures play a critical role in such a system. An applicant's previous academic record is a highly relevant measure in admissions decisions, but grade inflation in recent years dramatizes the lack of comparability of one school record to another. The admissions test score provides a useful common standard across the country and serves to balance differences from school to school at the secondary level. Thus the test score relieves the burden of doubtful equity that grades would bear if they stood alone. Studies repeatedly show that test scores and grades complement one another in providing the best estimate available of the likelihood that a student will succeed in a particular academic program (Fishman and Pasanella 1960; Hills 1966; Schrader 1971).

It is widely appreciated, however, that these traditional criteria concentrate on academic ability. While that is a critical consideration in admissions it is certainly not warranted to assume that grades and test scores reflect all aspects of accomplishment or character that are important in recruiting and admitting students to a particular institution or training program. There are, in fact, a number of reasons, time honored and well accepted, why institutions should and do pay attention to the personal qualities of applicants as well as to their academic credentials.

The following paragraphs list a dozen such reasons. Some (1 through 4) are related to the fact that there are many faces to "success in college," and a rigorous educational program makes many different demands on students. Other reasons (5 through 8) are related to the needs and objectives of institutions. Still others (9 through 12) concern the diverse nature of talent and the need to foster effective personal development of individual students. The relevance of these reasons naturally depends to some extent upon the nature of the particular program and whether the institution is public or private, graduate or undergraduate, professional or liberal arts, selective or nonselective, residential or commuter, and so on. With that important qualification in

mind, we can reasonably say that institutions take account of personal qualities in order to enroll students who possess the following diverse characteristics.

1. *Special talents.* These are important in particular courses of study, but they may be evidenced in nonacademic activities or not adequately reflected in the general academic measures normally available. Examples include unusual scientific or technical skill, bilingualism, musical ability, journalistic competence, and artistic talents. The work of John Holland and his associates at the National Merit Scholarship Corporation (NMSC) and the American College Testing Program (ACT) in the 1960s was seminal in demonstrating that past accomplishments are useful indicators of such talents (Richards, Holland, and Lutz 1967).

2. *Capability for complex performance.* This is the ability to carry out successfully a difficult task using such higher order abilities as problem-solving tactics, integrating and organizing skills, and divergent imagination. Over the years the work of Norman Frederiksen and his colleagues at Educational Testing Service (ETS) has demonstrated the value of using measures that simulate real-life complexity and predict achievement of significant educational outcomes (Frederiksen 1962; Frederiksen and Ward 1978).

3. *Career-related skills.* Examples are evidence of leadership, interpersonal competence, entrepreneural ability, unusual maturity, or special accomplishment in service activities. While few academicians see higher education primarily as a training ground, there is much sentiment that academic ability is not enough and that many academic programs are too much removed from the real needs of adult life and the professions. Wallach, for example, argues for an apprentice model of admissions and training that focuses more on what one wants graduates to be able to do (1976). The competency-based education movement is a response to similar impulses (Grant et al. 1979).

4. *Drive and initiative.* Demanding programs often require these qualities. In some cases they may be seen as a need for personal commitment, in others faculty may simply hope for the productivity of a persistent self-starter. In either case such motivation is elusive and must be read subjectively from what a student has done and how he or she is judged by experienced mentors.

5. Contribution of unique experience to a pluralistic learning environment. In some educational programs the diverse experiences of students have direct value in the instructional process (e.g., business management, social work), but in some degree all education benefits from diverse points of view, and some institutions place great importance on that diversity (Bowen 1977). Although diversity is often sought through geographic representation, increasingly educators have come to regard diversity of interests, special training, race, culture, and experience as more critical than diversity of residence.

6. Compatibility of students' academic interests with the institution. Some aspects of institutional interests are almost too obvious to notice. Other things being equal, preference in admissions may sometimes go to a student simply because he or she applies to a program that needs students; or quite different admissions policies might be applied across programs, particularly at the graduate level. More subtle aspects of "fit" come into play in selective recruiting of those students who show promise of profiting especially from attending a particular college (when, for example, an institution stresses social service, independent study, creative expression, affective outcomes, a particular orientation to a discipline, etc.).

7. Useful extracurricular skills. These can serve special roles useful to the institution and its students. It is commonplace to note wryly that the alma mater (public or private) takes some pains to recruit the necessary quarterbacks, piccolo players, etc., often with the implication that this is surely inappropriate. But a college is a community and has its unique personnel needs like any other self-sustaining group. Often the priority on those needs is argued hotly.

8. Personal background that helps to maintain important institutional ties. All educational programs have constituents, usually more than one type. They may be residents of a particular area, alumni, donors, a professional association, feeder schools, the state legislature, and so on. In an individual case, giving some preference to an applicant may be considered unethical, quite acceptable, or even mandated by law. But in general an institution has to follow admissions policies that respect the interests of its constituencies appropriately and that maintain institutional support and effective functioning—all without stepping over the line of academic propriety.

9. Likelihood of effective personal development. Students vary with respect to their goals and expectations regarding the college experience; colleges vary in the extent to which they provide an effective environment for development of particular students.

10. Persistence to graduation. The likelihood of staying in school is ordinarily not, in itself, a primary consideration in admitting students, but increasingly retention is seen as one component of effective enrollment management and the well-being of the institution. Other things being equal, a student likely to find the college a challenging and satisfying experience is much preferred over a disgruntled dropout (Pervin 1966). It seems reasonable to assume that personal development and retention are related, though not necessarily one to one. While there has been a considerable amount of research on student development, there is relatively little practical basis for applicants to assess colleges in this respect beyond rumor and the conventional wisdom of available college guides. See Astin (1976), Bayer (1968), and Tinto (1975) for notable exceptions. Similarly, most colleges have only informal hunches as to what types of students are most likely to grow personally on their campuses.

11. Diverse skills and abilities that foster a broadened view of talent. John Gardner (1961) argued eloquently in his classic essay *Excellence* that there are many varieties of talent, all of which play an important role in society and deserve to be valued appropriately. As he said, if we blindly honor mediocre philosophy at the expense of good plumbing neither our ideas nor our pipes will hold water. It is therefore good social theory as well as sound educational practice to avoid a narrow conception of talent that places exclusive emphasis on academic competence.

12. Concrete achievements that deserve recognition. When an institution selects a student partly because of some outstanding accomplishment, it sends a message to younger students and their families and schools. There is a long-term benefit to the college and to education generally if the admissions policy obviously rewards students who have undertaken a successful effort toward a significant goal, demonstrated an unusual skill, learned to write well, etc.—whether or not such students are more likely to earn better college grades than others of equal academic ability.

Clearly these dozen reasons for emphasizing qualities other than academic competence in admissions are not practiced uniformly by all

institutions. They represent rather the variety of considerations that come into play if one looks broadly at the admissions function in higher education (e.g., Manning 1977; Thresher 1966; West 1965; Willingham et al. 1973). While each of these twelve may make sense—especially in the proper institutional context—they seem mostly concerned with institutional selection. Now it is well known that most colleges are likely to be less concerned with selection in the 1980s. Why the need for special attention to personal qualities in admissions now? Let us examine briefly some major influences that are changing the character of college admissions. These changes have a very important bearing on the role of personal qualities in the admissions process and, we believe, on the very way one needs to think about admissions and its relation to institutional objectives generally.

MAJOR TRENDS IN ADMISSIONS

It is useful to think of three large influences on the admissions process: demographic, social, and legal. These seem relatively independent, but their effect is generally similar in important respects. The following discussion mostly concerns four-year undergraduate colleges and universities, although it is important to appreciate that public attitudes and professional practices in admissions are often influenced by what goes on in graduate and professional school admissions.

Demographic impact

The facts of the demographic impact are well known and have been analyzed and discussed in detail (Centra 1979). Much of the statistical analysis can be simplified, however, to one observation: The number of 18- to 21-year-olds in the population will decrease by 25 percent from 1980 to 1995—roughly mirroring the steady increase in the size of that age group in the previous 15 years. Needless to say, this fact has caused a great deal of concern, although many admissions officers are evidently working on the hopeful assumption that the burden of the downturn will be borne by institutions other than their own (American Association of Collegiate Registrars and Admissions Officers and the College Board 1980).

This demographic problem has also inspired much speculation as to its real effect on enrollment when other developments or interventions are taken into account. The unknowns include such possibilities as a return to the draft, a national service program, a larger number of

women students, a tightening job market, more nondegree credit work, and particularly the expectation of more adult students. This latter hope is supported to some degree by the fact that the 18 to 35 age group will maintain an almost constant size to 1995; i.e., colleges may have the same total population of potential students overall *if* they can draw from that wider age range and attract substantially more older students.

Most analysts assume, however, that college applicants will decline and that more colleges will face serious enrollment problems. For the past two decades the dominant issue in admissions has been how to select among applicants; for the next decade, at least, the issue is more likely to be how to attract and retain a student body appropriate to the character, tradition, and objectives of the institution. Undoubtedly, most institutions will continue to use traditional measures of academic ability to maintain reasonable academic standards, to reject clearly unprepared students, and to support placement and guidance work.

But will all institutions continue to find the same number of freshmen with high test scores and grades among a diminishing group of high school graduates? The answer is clearly no. Enrollment pressure has already intensified interest in marketing strategies by which colleges might successfully target their recruiting efforts toward students with appropriate characteristics.

Sophisticated marketing needs to take careful account of the strengths of the institution as well as the interests and characteristics of the consumer, but there is a limited research and intellectual base for sophisticated marketing in admissions. In some respects the challenge of the 1980s is a fortuitous and important opportunity for colleges to learn more about how the personal characteristics and goals of their students match their programs. Unless higher education takes that opportunity, there is danger that marketing may simply come to mean short-term hard sell without a sound long-term educational philosophy.

Social impact

There are several aspects of social impact on admissions that have gathered steam in recent years and promise to continue into the next decade. One is affirmative action—the urgent and continuing need to encourage broad representation in higher education of women and minorities as well as economically deprived students. Another is the increasing emphasis on lifelong learning—a movement already well advanced in some countries of western Europe where it is more commonly known as recurrent education. Many feel this emphasis represents a fundamental and overdue shift in educational philosophy and

attitudes regarding personal development and effective use of human resources (Peterson et al. 1979).

A third social influence is the prospect of long-term financial stringency because of an uncertain national economy, the rising cost of education, and limitations in student financial assistance. To the extent that there is financial restraint on admission to higher education in the next decade, it will likely affect affirmative action and lifelong learning, and, more generally, influence who is able to obtain education and under what circumstances.

Financial stringency tends to fuel another important social aspect of the admissions process—a shifting set of consumer expectations. Compared to a decade ago, the public is now much more inclined to want its money's worth from college, to feel that higher education should represent developed competence, to expect that a diploma will enchance employability. These expectations are also related to new demands for more accurate information from colleges about their programs and more concern for the interests of applicants. Some aspects of test criticism are similarly directed, particularly the view that admissions tests are too narrowly conceived, do not represent adequately the applicant's view of his or her important strengths, and do not advance the student's educational needs and goals.

The net effect of these social trends in admissions is to place greater importance on the characteristics and interests of students as opposed to a traditional set of values that more clearly reflects the interests of the institutions and the academic disciplines. Put another way, these social trends tend to alter the mix of college students and how they need to be served; i.e., who they are, what they have done, and what they want to do. Such social trends are enhanced, of course, to the extent that admission to college becomes a buyer's market.

Legal trends

In admissions to higher education, legal trends are of two varieties, legislative and judicial. Both represent an important change in the admissions process—a gradual but significant increase of the degree of public involvement. This public involvement seems partly a demand for greater accountability, which may simply be another reflection of public disenchantment with education.

On the other hand, legislation affecting admissions policy and operations comes from a variety of concerns: an interest in protecting privacy, provision for special admission programs at the state level, open testing, stratification of admissions standards within state systems,

and state-mandated requirements for receiving high school credit. Legislation in education comparable to that authorizing federal guidelines for equal opportunity in employment would be a more extreme move toward regulation of admissions, but is not viewed as an unreasonable possibility by some.

By far the most important judicial development is the well-known *Bakke* case. According to conventional wisdom that decision was ambiguous, more politically sagacious than legally noteworthy, and a somewhat disappointing result following an unprecedented advance billing. This characterization is not actually untrue, but it leaves much unsaid.

With respect to the narrow issue of admissions practices in higher education, *Bakke* was far more significant for its long-term philosophic implications than for its immediate mandate. On the basis of a complex set of conflicting opinions, most of which earned no majority endorsement, the justices declared constitutional the use of race as one factor in admissions. There were varying opinions of the psychological impact of this decision, but the short-term practical effect was not pronounced, nor was it intended to be; the court clearly sanctioned what it thought most institutions were doing, thus gaining time to deal with the issue through seemingly inevitable further litigation.

While affirmative action, the overriding social issue in the case, was not decisively handled, there is a deeper meaning to *Bakke* with respect to its long-term implications for college admissions. Three noteworthy themes appear in the courts' discussion of the case; these are visible particularly in the critical Powell opinion but in others as well (Powell 1978).

One theme in the *Bakke* opinions is the inherent appropriateness, even desirability, of a selective institution seeking diversity in the characteristics and capabilities of its student body. Institutions, even private colleges, sometimes seem discomforted to say very openly that there are any other than purely academic considerations in admitting students. In making quite clear that there is no legal reason for picking only those applicants who rank highest academically, Justice Powell lightened an unnecessary burden for colleges and encouraged more forthright discussion of admissions policy.

As a related theme, the *Bakke* opinions stressed the autonomy of institutions to decide for themselves, within the bounds of constitutional protection, on what basis they should admit students and also their responsibility to justify that policy. This means having a rationale for admissions policy and practice; it also means having evidence of the validity and reasonableness of the measures used to select students.

Finally, there is an emphasis in these opinions on due process in admissions, particularly the need to make known admissions criteria and to consider all applicants individually in one admissions process (i.e., no separate competitions for some groups of applicants).

These views expressed in the highest court concerning fundamental issues in admissions should have a very constructive long-term effect on the conception of admissions policy and its practice. Also, there is indication that at least some of the justices were partial to the recommendation of the Carnegie Policy Council (1977) for using traditional academic measures as a baseline for admissibility, with other factors coming systematically into play above that line (i.e., more explicit emphasis on personal qualities). Beyond these possibilities, the legal trends in admissions suggest increasing insistence upon accountability, public scrutiny, and legal contest, particularly in highly selective professional schools. In this climate there is danger of pressuring admissions offices to retreat either to a defensive overemphasis on objective measures or to a totally subjective process with little protection of individuals or academic standards.

SOME IMPLICATIONS FOR THE 1980s

These demographic, social, and legal influences on the admissions process are not inconsequential. Taken singly, each will have an important impact; taken together they suggest more general conclusions. One is the fact that we are emerging into a new era in admissions. Consider the following major changes in college admissions since the years immediately following World War II.

The 1950s through about 1965 can be characterized as a meritocratic period. It was a time of ascendence for the academic disciplines, a time for building great laboratories and institutions, when academic excellence became a top national priority due partly to the threat perceived in the Russian Sputnik. For most institutions this was also a period of increasing selectivity that reached its peak in the enrollment boom of the early 1960s.

The next 15 years, from about 1965 to the present, are more accurately viewed as a egalitarian period in college admissions. It had its origins in the Civil Rights Movement, although the student protests of the mid-1960s and the "open admissions" experiment were not unrelated. By the end of the 1960s many institutions had special admissions programs, and there were substantial amounts of financial aid available. As a result, by the mid-1970s there was a very significant increase in the enrollment of disadvantaged minority students and also

women throughout undergraduate, graduate, and professional schools (Willingham and Breland 1977). Linked closely to these developments were extensive remedial and support programs to compensate for inadequate preparation where necessary.

These two periods were certainly not distinct; the dates are a bit arbitrary, and important aspects of the first carried through the second. Similarly, there is every reason to believe that elements of both will continue into the next 15 years, but the trends outlined above suggest that we are moving now into a new period—a pragmatic era in college admissions. The demographic, social, and legal trends are especially associated, respectively, with heavy emphasis on recruitment, consumerism, and accountability—all pragmatic in tone and value. A difficult challenge in the decade ahead will be to deal effectively with these pragmatic issues without yielding too much on meritocratic and egalitarian values.

Arguing that admissions is taking a turn into a new era raises an obvious question: In the face of such changes are the dozen points cited in the "traditional case" for using personal qualities in admissions now less relevant? Quite the contrary. Indeed, a second general conclusion one reaches from this discussion of trends is that the case for personal qualities in admissions is all the more compelling.

Demographic trends suggest that all colleges cannot look for the same very academically able students and must seek in other qualities an educational rationale to guide their *recruitment* efforts. Legal trends suggest the need for a better institutional rationale for the use of multiple measures in *selection*, better evidence for their validity, and more careful attention to equitable procedures for their use. Social trends suggest that colleges need a better understanding of personal characteristics and goals of diverse student bodies in order to improve their education and *retention*.

A third conclusion one might draw from this discussion is the need for a somewhat different conception of the admissions process than has prevailed throughout the meritocratic and egalitarian periods. Most four-year institutions have relied upon a *selective model*, in which the main emphasis has been upon institutional selection of those students most likely to succeed in a fixed program. The substantially new conditions facing admissions in the 1980s suggest that most institutions will be less able to influence the nature of the student body through selection.

Competitive pressures may require admitting most of an applicant group determined largely through self-selection, but clearly an institution can influence that self-selection through the priorities it sets in its recruitment efforts. It seems likely that excellence is the most effective

magnet, and there are many forms of excellence. Thus even under difficult enrollment circumstances there are still many options whereby the college might determine the character of its student body, but those options must be seen in a larger view of admissions as a developmental process for both students and the institution. For example, a *developmental model* of admissions:

- places more emphasis on recruitment–selection–retention as parts of a single sorting process that eventually defines the institution's student body;
- includes special efforts to change both admissions policy and educational programs in ways that better serve the particular constituency and objectives of the college;
- puts more emphasis on traditional academic measures for describing preparation and as a basis for admissibility, while putting more emphasis on student characteristics, accomplishments, and goals as a basis for targeted recruiting.

Aside from its educational attractiveness, a developmental model of admissions may prove useful in another respect. Likely social and economic trends suggest that it will become increasingly important for higher institutions to demonstrate that they provide benefits to individuals and society that warrant continued and perhaps increasing private (tuition) and public (taxation) support. The traditional economic argument of return on investment may not be strong enough. A developmental model could help to highlight educational benefits not readily measurable in economic terms.

The main conclusion of the foregoing discussion is clear: It is important to strengthen the use of personal qualities in admissions, but what is implied by "strengthening" personal qualities? How might one go about that; what are the desirable outcomes; what are the hazards? These questions deserve careful attention. It is useful to think of such issues generally as the problem of validating the use of personal qualities.

VALIDATING PERSONAL QUALITIES

As already noted, various institutions may consider student personal qualities to be relevant in different aspects of admissions and for quite different reasons. Colleges do share, however, a common concern that any such use of information about students be valid; that is, defensible and useful for educational purposes.

It is important to recognize at the outset that there are potential problems with the use of many types of information in admissions. A limited number of undergraduate colleges now place heavy emphasis on personal qualities; these are typically very selective institutions that devote considerable resources to a highly individualized and careful selection process. To contemplate more systematic use of personal qualities in a much broader range of institutions for diverse purposes, however reasonable and well-intentioned, does entail hazards. These include several threats to fairness and educational quality.

One threat is the capriciousness and bias that can easily color judgments based on information that is not altogether objective. Another is the ethical dilemma of basing admissions decisions partly on background measures over which the individual has little or no control; or of seeking and using highly personal information that bears on desirable traits like honesty, compassion, and commitment; or appearing to make negative judgments about a rejected applicant's character or competence that may be more damaging personally than a judgment of inadequate academic preparation.

In a similar vein there may be important imbalances in opportunity to demonstrate some accomplishments if one is poor, female, black, or comes from a small school. The failure to recognize "late bloomers" may be more of a problem if evidence of early accomplishments receives undue emphasis. There is also the obvious threat to academic standards when considerations other than academic competence gain prominence in admissions to higher education. In giving more attention to student goals there may be a subtle additional threat to academic standards, namely, the possibility of accepting too uncritically the idea that "the customer is always right."

These hazards amply illustrate that validating or justifying personal qualities for use in admissions is a complex business. What should be the purpose of validation? There are two overarching objectives. One is to demonstrate how particular measures (accomplishments, background characteristics, student goals, etc.) are educationally useful on behalf of students and institutions. Another is to be sure that their use meets acceptable assessment standards.

There are various ways to justify and demonstrate the usefulness of personal qualities in admissions. One is to show that some accomplishment or characteristic of applicants is a useful supplement to school rank and test scores in anticipating some accepted form of success in college. Another is to show that some characteristic is useful in improving the recruitment of students who exhibit strong personal development in college and remain until graduation. Another is to document

formally that the inclusion of some students with diverse backgrounds is an a priori institutional objective. In all of these instances it is critical to recognize that there are many ways of demonstrating institutional benefit and whether students are profiting from their education. Student development is an important aspect of success in college, and the criterion is not simply who makes good grades.

Validating a measure involves more than demonstrating usefulness; it also has to meet acceptable assessment standards such as the following: any measure that serves an important role in admissions must be legally sanctioned and ethically acceptable; it must be reasonable, reliable, and not readily subject to misrepresentation; it should not be biased against some students; and finally, any method of collecting information about students that is acceptable on these grounds must also be feasible from an economic and practical standpoint.

Studies of the usefulness and assessment quality of measures used in admissions have focused heavily on traditional academic measures. This lack of balance badly needs to be redressed, particularly with follow-up studies of applicants within institutions—studies that focus on the decisions made by or about students and various aspects of their performance and development. The goal of such work should not be to develop tests of personal qualities but rather to understand better the nature of those qualities, their relevance to student development and effective institutional programs, and how reliable institutional judgment of such qualities can be assured.

Needless to say, issues of such scope and character must be addressed largely by individual institutions over time, and any one study can only hope to add a useful piece to a larger picture. Nevertheless, the College Board and Educational Testing Service became convinced a few years ago that it was important to focus more attention and hopefully to stimulate more research on these issues. A principal outgrowth of that concern was the initiation of this major cooperative research project sponsored by the two organizations.

3

Past Research on Personal Qualities

Prior to reporting the results of analyses of new data, it is of interest to consider past studies of personal qualities in admissions. In practice, personal qualities of applicants to academic programs have most often been assessed through a variety of procedures rather than as unitary traits. Personal history information, letters from those who know the applicant, interviews, and other techniques have been used. Therefore, a review of past research on personal qualities in admissions is essentially a review of experience with these procedures. In such a review, three principal factors are of special importance: reliability, validity, and acceptability.

Reliability reflects a concern for the consistency of results obtained with a particular procedure—often a judgment of some type. A procedure that is reliable can be repeated for the same individual and yield the same outcome within reasonable limits. A perfectly reliable procedure is one that results in perfectly accurate assessment. Of course, most assessments made in admissions are not free from error, but it is important to estimate the relative accuracy of the various types of assessments made so as to determine which warrant attention in the overall admissions situation. If a procedure is not reliable, it is not likely that it can be shown to be valid.

Validity refers to the usefulness of a particular assessment procedure. Most commonly, a procedure is considered useful if it tends to predict some future outcome of importance—as high school grades tend to pre-

dict college grades, for example. But predictive validation is only one way of demonstrating the utility of a procedure. Other methods are construct validation, where evidence is assembled to support a procedure as a measure of some definable trait, and content validation, where a procedure is shown to have content that is of unquestionable importance in a given situation. Validity can also be demonstrated by showing that a procedure is effective in helping an institution achieve certain stated goals. For example, an institution may wish to introduce diversity in its student body, maintain student persistence to a degree, or encourage certain career choices; or, an institution may be primarily concerned with student development, as in the apprenticeship approach to higher education suggested by Wallach (1976).

One of the principal difficulties in predictive validation is the problem of the criterion, the outcome to be predicted. An average grade index for the first year of an academic program, whether it be the freshman year of college or the first year of law school, is a convenient criterion because it is a commonly developed index and because one does not have to wait long (from the time the predictor data are collected) to obtain it. Longer range criteria are victims of the vicissitudes of time, unanticipated events, staff turnovers, and the like. It is not surprising, therefore, that fewer predictive studies are conducted with long-range criteria. While these long-range studies are desirable, the faculty in institutions of higher education as elsewhere are very much concerned with the performance of students when they enter an institution and the amount of teaching effort and time required to impart the essentials of what faculty are expected to teach. The importance of performance during the first year coupled with the relative ease with which such performance data can be obtained probably explain why there have been so many studies of it, but long-range criteria—academic as well as nonacademic—are also important.

Criteria also vary with respect to their reliability. The first-year grade average is a relatively reliable measure in comparison to similar grade averages obtained in later years (e.g., the senior year in college) or in the later stages of professional programs of education (e.g., the clinical years in medical school). The reliability of first-year grade averages reported in the literature range from .50 to .80 (Etaugh, Etaugh, and Hurd 1972; Humphreys 1968; Humphreys and Taber 1973; Werts, Linn, and Jöreskog 1978). Two studies have demonstrated that the reliability of grade averages decreases with the number of terms enrolled (Etaugh, Etaugh, and Hurd 1972; Werts, Linn, and Jöreskog 1978). If the criteria are not reliable measures, it is difficult to demonstrate statistically that admissions indicators are related to them and are thus

valid as predictors of later performance. Such an inability to demonstrate predictive validity may not mean so much that the admissions indicators are invalid as that the criteria are unreliable. A good example of this situation is the use of subjective judgments of medical school faculty as the criterion of performance in the clinical (usually the last two) years of medical school. The subjective judgments tend to be inconsistent from one faculty member to another and thus difficult to predict (see, for example, Guilford 1965, page 488, for a discussion of such judgments). The predictive correlation obtainable when studying admissions indices is quite often as much a function of the quality of the criterion as it is of the quality of the predictor. Accordingly, some caution is necessary in the interpretation of correlation coefficients and other statistics used in evaluating the predictive validity of admissions procedures. Nevertheless, a reasonably good positive correlation is suggestive of reliable measurement on both the predictor and the criterion sides. When such positive correlations are repeated in a number of studies, they take on important meaning.

Acceptability covers a number of practical considerations that govern the use of procedures. These include economic feasibility, ethical considerations, practicality of implementation, fairness, and public acceptance. Any one of these practical considerations may tend to dominate decisions concerning usage, at times inappropriately. Extreme economic constraints may force an institution to a narrow set of procedures that may favor some segment of the applicant pool. Conversely, widespread public acceptance of a procedure may exist even though no evidence exists to support the validity of the procedure. More often, however, it is the lack of public acceptance that tends to prevent the use of certain information or procedures (e.g., religious affiliation or personality tests).

Each of a number of procedures, some common and some not so common, are considered in the following sections with respect to their reliability, validity, and acceptability. The order in which the procedures are considered reflects roughly an ordering by degree of usage. We begin with biographical data because that is essentially what the application blank collects, and the application blank is the most fundamental procedure in admissions. The application blank can easily be extended to the biographical inventory with additional questions and scaling procedures. The application often requires the student to write a personal statement. Even though the personal statement is a part of the application, it is most usefully analyzed as a separate procedure. Accordingly, personal statements are considered as a second category of procedures following biographical data. Recommendations are prob-

ably the third most common procedure in admissions work. Interviews, while common, are not usually required of all applicants, and their use varies somewhat. Interest measures are treated next because, even though they are less common when used as formal measures, information about interests is often obtained through admissions materials. Peer evaluations are discussed last, since they are primarily of value in admissions work as a criterion for examining the utility of admissions procedures.

To the degree that is is possible, each of these procedures is considered in the context of a broad range of outcomes. Much past research has concentrated on the prediction of academic performance, but special efforts have been made to uncover research studies of the prediction of nonacademic performance and other outcomes of interest. In recognition of the limited perspective offered by predictive objectives, special efforts have also been made to consider other objectives or considerations of higher education: diversity, equity, privacy, economy, public acceptance, and enrollment. All of these are legitimate concerns in admissions decisions. Any of the procedures that contributes to the attainment of any of the desired outcomes is a useful procedure; however, some procedures may contribute more effectively than others.

BIOGRAPHICAL DATA

As the term is used in research literature, biographical data usually include background characteristics such as sex and race as well as different types of personal achievement and experience. Biographical data are used in admissions in a variety of ways. The application blank itself is used to collect biographical information on applicants. The biographical inventory is, essentially, an extension of the application form even though it may be used separately and given a different name. The information collected may be weighted in different ways and empirically keyed to predict some outcome of interest. Formal interest and attitude inventories will be kept separate in this review; however, since brief questions reflecting interests and attitudes may be included in biographical inventories, they are to some degree represented in this section as well.

There are good reasons why biographical data are frequently collected and used. Such background data help to portray the applicant as an individual. It is expected by the applicant that such information will be collected. Also, the data are readily obtained, inexpensive, easily handled by information processing equipment, and usually accurate. The information can be used in numerous ways beyond aiding in ad-

missions decisions. For example, it can be used to help institutions identify particular kinds of applicants or to inform applicants of special programs and institutions that may be of interest to them. This kind of information exchange may become increasingly important as institutional and societal interests in admissions shift from a dominant concern with future academic performance to broader concerns of nonacademic performance, persistence, career choice, diversity, and student development.

Given the wide range of questions that can be asked on an application blank or a biographical inventory, any evaluation of the reliability, validity, and acceptability of such questions or combinations thereof must be carefully attuned to the different types of information encompassed. Some questions are essentially demographic, but even within this category there are important differences. Questions about gender and ethnicity, for example, are of proven utility and have come to be accepted as appropriate. Other questions are at times more personal, not necessarily useful, and possibly offensive. Parents' income, for example, may contribute to the prediction of academic performance in an empirically keyed inventory, but it does not follow that it is an appropriate item for use in making admissions decisions.

Reliability of biographical data. One would assume that most personal history information would be reported consistently by most applicants. There also exists empirical evidence to support this assumption. Nicholson (1970) administered a personal information form to 80 college applicants and obtained a correlation of .81 when the same form was administered eight months later. In the same study, an accomplishment inventory correlates .84 with responses obtained on two occasions over the same time period. Other evidence of the consistency of responses to biographical inventories has been reported by Owens (1976) and Baird (1976).

Validity of biographical data. There is evidence to support the use of biographical data for three different criteria: academic performance, nonacademic performance, and broader institutional objectives. A number of studies report impressive correlations between empirically keyed biographical inventories and academic performance in college with a median correlation of about .40 (see, for example, Aiken 1964; Malloy and Ivanoff 1964; Payne, Rapley, and Wells 1973; Webb 1960; Willingham 1965). High school accomplishments in a number of nonacademic areas have also been shown to be related to similar nonacademic accomplishments in college (Nichols 1966; Nichols and Holland

1963; Richards, Holland, and Lutz 1967; Wing and Wallach 1971), although the relationships obtained tend to be less (a median of about .35) than those obtained for academic prediction. In one study by Anastasi, Meade, and Schneiders (1960), a correlation of .55 was obtained between an empirically keyed inventory and a comprehensive (academic and nonacademic) long-range criterion of college performance. The utility of biographical data in the attainment of broader institutional objectives such as diversity, equity, and student development is supportable on rational rather than empirical grounds. And yet some caution is necessary in the construction and use of inventories because, even though empirical validity may be demonstrable, the content of the individual items of the inventory may not be relevant to what is expected from a student (see Pace and Schoenfeldt 1977).

Acceptability of biographical data. A troublesome aspect of self-reported data has been the belief among admissions officials and researchers that such data may lack authenticity, or that they may not be verifiable as accurate. Moreover, it is contended that—were it known that data of this type are important in making selection decisions—applicants would learn sooner or later the correct responses. Baird (1976), in defense of self-reported information, argues that the authenticity issue is less important than some believe it to be. Studies by Walsh (1967, 1968, 1969), Baird notes, demonstrate that self-reported information is generally accurate. Walsh (1967) also studied the effects of incentives to distort responses and concluded that they had little effect on accuracy. However, if questions are excessively personal, they tend to yield distorted responses (Walsh 1968).

The acceptability of biographical data items depends somewhat on the kind of information at issue and its intended use. As noted above, it is well known that socioeconomic status and similar measures correlate with academic performance. But it does not follow that they are appropriate for making admissions decisions. On the other hand, demographic information is appropriately used for affirmative action and other preferential purposes (e.g., geographic diversity). If care is not taken, the use of past accomplishments in making admissions decisions may penalize those who have not had opportunities for accomplishment. Disadvantaged students may not have attended schools that provided adequate opportunities to engage in some activities because of lack of facilities. For example, if a particular honor society does not have an active chapter in the school attended, it is not possible to have been initiated into the society. But some available evidence indicates

that disadvantaged students do about as well in high school accomplishment as do other students. Baird (1967) compared college-bound student groups in the lowest quarter of parent income to those in the upper 1 or 2 percent of parent income and found very small differences in nonacademic accomplishments. In the higher levels of achievement, virtually no differences were observed. In a second study (Baird 1969a) students from families in different income levels were found not to differ significantly in the number or level of accomplishments reported. The evidence available so far is indicative of few mean differences, nationally, for self-reported accomplishments for different ethnic groups. Bayer and Boruch (1969) sampled black and white students in 358 colleges and found that slightly greater proportions of black students participate in extracurricular activities and have more nonacademic achievements that do white students.

PERSONAL STATEMENTS

A relatively common admissions procedure is to request the applicant to write a brief statement or to enclose something already written with the application materials. These written statements can, of course, come in a variety of forms: essays, autobiographies, and other free-response writing. The written statement as used in admissions often requires that the applicant write about interests, goals, or whatever it is believed will assist admissions staff in the evaluation of the application. At times the response is an essay on a topic of interest to the applicant. Rarely is the usual statement a complete autobiography, but often the applicant will provide important life history information not available in other parts of the application. Free-response statements have also been obtained in research studies related to admissions by means of specific stimuli. For example, a subject may be asked to reflect about his or her future career and then write something. Responses can be coded in a number of ways, such as whether they provide evidence of a creative orientation, an intellectual orientation, or a planning orientation. Similarly, subjects may be asked to describe their most enjoyable activity during the past year or so, and these responses can be coded also. At a much more elaborate level, written statements are used in psychological studies as a projective technique in attempts to gauge fundamental psychological attributes (e.g., Atkinson 1958; McClelland 1961). These elaborate procedures have not been considered practical for admissions work, however. A review of the uses and value of the autobiography was conducted by Annis (1967).

Reliability of personal statements. Since written statements as ordinarily used in admissions are rarely scored in any numerical or categorical sense, very little is known about their reliability. As a baseline of evidence, however, some indication of the reliability of judgments of written statements comes from experience in the assessment of writing skill using brief impromptu essays. Coffman (1966), for example, obtained writing samples from 646 secondary school students and then had these samples scored by English teachers. Essays on five different topics were written, and each of these was scored independently by five different teachers. Estimates were then made of reliabilities for any combination (up to five) of numbers of topics and numbers of readers. Interrater reliabilities ranged from .56 (for two raters) to .76 (for five raters) when a single essay was judged. However, estimates of score reliability (reflecting also errors introduced by sampling behavior on only one topic) ranged from .38 (two raters) to .52 (five raters). Maximum score reliability, of course, was obtained with five raters and five topics (.84). Studies of writing skill, therefore, suggest that when this one attribute is judged, reliabilities are typically quite low unless several readers and several topics are used. Since usually only a single statement or essay is obtained, and since this sample is not carefully judged by several independent raters, one would expect that reliabilities of such evaluations are low as compared with grade averages or test scores. When attributes less well-defined than writing skill are judged from written statements (e.g., maturity, motivation), reliabilities are likely to be even lower.

Validity of personal statements. There is much less available evidence on the validity of personal statements. In a typical study by Holmes and Hertel (1967), randomly selected sketches by 69 students at the University of Michigan Medical School were compared with class standing at the end of the first year. Predictions were made, at better than a chance level, of upper, middle, or lower class standing. But no evidence was presented of incremental validity beyond that possible with the usual predictors.

A rather different approach was used by Nichols and Holland (1963) to elicit evidence of creativity from National Merit Scholarship finalists. Since these students were already carefully selected on the basis of standard academic indicators, the objective was to further discriminate with respect to nonacademic factors. A number of techniques were used. A written statement on social problems was scored both for length and for originality. A free-response comment on most liked high school class hour was coded for creative thinking versus noncreative

thinking. These scorings of free-response statements were found to correlate positively and significantly with nonacademic achievements during the first year of college for some groups. For example, the length of written statements on social problems correlated .35 with literary achievement for men. Creative thinking correlated .34 with literary achievement for men, but −.14 for women. Creative thinking in free responses correlated .32 with Ph.D. degree aspirations for women.

Acceptability of personal statements. Written statements are easily obtained and are usually quite acceptable to those who work in admissions. There are some obvious problems with them. One cannot be certain that the applicant wrote the statement if it was obtained through the mail. Also, while the written statement is readily obtained, the careful reading of them is "sheer drudgery," in the words of one reviewer (Davis 1973). Consequently, they are often not read carefully and rarely are they scored or coded in any systematic way.

RECOMMENDATIONS

Recommendations come in a variety of forms including ratings and letters of reference. The letter of reference has been for many years almost a *sine qua non* of applications for both employment and academic admissions, particularly at the graduate level. Some institutions have used recommendations more to identify misfits for rejection than to single out which qualified applicants to admit. In recent years, recommendations have come under increasingly heavy attacks because of the lack of confidentiality brought about by the Family Education Rights and Privacy Act of 1974 (Buckley Amendment). Possible sex bias, problems of interpretation, the amount of work it requires for some referees such as secondary school counselors and college professors, and the lack of uniformity of effort on the part of the referees are other concerns that have been expressed. Moreover, in a climate of anxiety about the declining population in some age brackets, there are those who fear that the requirement for recommendations may deter applicants. Nevertheless, recommendations are still widely used.

In an attempt to circumvent privacy restrictions, many institutions advise referees that applicants may sign waivers of their right to access. But at another extreme, referees are also at times reminded that whatever they write may be seen by the applicant and that, therefore, special care should be taken in the preparation of recommendations. These problems with recommendations have at times annoyed those who work with them, be they writers or readers. One dean and teacher at an

independent day school, after writing 43 letters on behalf of the school and 86 as a teacher, wrote:

> It depresses me to think that these efforts may not count much, and even more to wrestle with the question of what constitutes honest disclosure. The colleges encourage "candid" statements, yet I have acquired sufficient distrust of admissions committees to wonder what they would do with a fully candid statement (Wells 1978, page 63).

At the other end of the same kind of communication, the director of admissions at a selective Ivy League college notes the lack of consistency in recommendations and thus the unfairness they create for some students through no fault of their own:

> . . . the entire secondary school report for one applicant was: "Real fine candidate." Another teacher prepared the same report for *all* applicants [and] made a Xerox copy of the report with blank spaces left for the names of students who might ask for recommendations . . . (Wickenden 1979).

Such concerns are not limited to the undergraduate level. A law school dean of admissions recently wrote:

> Letters of recommendation have become so devoid of meaningful content that rarely can an admissions officer put any faith in them. The pattern reveals an inflation of praise, an overstatement of merit, a conspicuous avoidance of anything negative, and a boiler plate of sanctimony that is reminiscent of Victorian poetry (Thomas 1978, pages 220–221).

And a participant in medical school admissions offered this vignette:

> . . . a single bad year, a poor mark in a required course, or a lukewarm letter of recommendation can occasionally turn the tide against an otherwise qualified candidate. In this last regard, I well recall a thirty-minute discussion at one admissions committee meeting about one recommendation: "I would expect that George will become a good, if not excellent, clinician" (Levitt 1978, page 249).

At issue was whether this was a "good" or "bad" recommendation.

Reliability of recommendations. While there are few research studies of recommendations, there are almost none that address the critical question of reliability. Harmon (1966) conducted extensive studies of recommendations used in National Science Foundation (NSF) scholar-

ship applications for graduate study. Reliabilities of single references were reported in the low .30s, and multiple ratings were not a great deal more successful. Cuca, Sakakeeny, and Johnson (1976) indicate that medical school recommendations written by undergraduate professors failed to correlate at all with letters written by classmates.

Some evidence on the reliability of recommendations has been obtained in employment settings. Rim (1976) examined the reliability of letters of recommendation written about candidates for teaching positions in a university. He analyzed 89 letters about 23 candidates. These letters were then submitted to five different full professors who were asked to assign ratings of plus, minus, or zero to reflect their judgment of the value of the recommendation for the candidate. Only 14 of the letters received a plus rating from all the judges, while 20 of the letters received both positive and negative ratings. It was observed that there was no systematic relationship between the kind of candidate and the kind of letters written about the candidate. It was concluded that the reliability of letters of recommendation leaves much to be desired.

Validity of recommendations. Breland (1981) summarized several studies that reported evidence on the validity of various types of recommendations in various settings. The median predictive correlations of .20 and .18 for academic and nonacademic outcomes, respectively, indicate that recommendations are about as useful for predicting one as the other.

Long-range criteria were used in studies of Ph.D. attainment by Creager (1965), Creager and Harmon (1966); graduate school performance by Mehrabian (1969); and research scientist performance by Harmon (1966). For nine different samples of students in nine fields of graduate study, Creager computed point-biserial correlations between reference ratings and Ph.D. degree attainment ranging from .08 to .23, with a median of .17. However, incremental multiple correlations (beyond those attainable with Graduate Record Examinations (GRE) and other test scores, but without grade point average (GPA), were zero in seven of the nine samples. Using the criterion of time lapse between B.A. and Ph.D. degrees, Creager obtained zero-order correlations ranging between .11 and .33 with a median correlation of .23. Multiple correlations were not increased in four of the nine groups, but one group had an increase from .40 to .46. In none of these multiples was undergraduate GPA used, however.

In a survey described by Cuca, Sakakeeny, and Johnson (1976) it is of special interest to note that recommendations are perceived as most useful (by 534 medical school admissions committee members) for

appraising scholastic achievement when comparing applicants from the same premedical college. They are seen as least valuable for assessing motivation or for judging the suitability of the applicant as a potential physician.

These predictive validity studies tend to paint a rather bleak picture for the utility of recommendations as they are normally used. Moreover, there is always the question of what information was available to the referee when making the recommendation. In the case of professors, it might be assumed that they have some information concerning the student's academic performance. And, at times, they may even know the student's test scores. If this is the case, it may be somewhat surprising that the predictive correlations for recommendations appear to be somewhat less than those possible using grades and test scores alone. Perhaps Frederiksen's (1954) comment about interview ratings (that they tend to water down information already available) is equally applicable for recommendations.

Acceptability of recommendations. Despite apparent unhappiness with recommendations, some evidence suggests that they are indeed used heavily by selection committees. Calkins et al. (1974) report correlations of .38, .38, and .28, in three different years of medical school admissions, between reference ratings and a selection committee index. The recommendations seem to be acceptable for committee decisions even though they tend not to correlate with later performance and apparently do not add much to other information already available. Recommendations may be less acceptable to those who have to prepare them, even though only testimonial evidence is available.

Possible sex bias in recommendations is beginning to generate commentary (Farley 1978; Guillemin, Holstrom, and Garvin 1979; Kryger and Shikiar 1978; Lunneborg and Lillie 1973), though little concrete evidence of bias has been presented. A perhaps even more troublesome problem of acceptability was studied by Shaffer, Mays, and Etheridge (1976) who suggest that letters written without waivers of privacy access had less credibility than letters with the waiver. Subjects with "confidential" (access rights waived) letters were judged more attractive as prospective employees and preferable as job supervisors.

INTERVIEWS

Interviews are used extensively in all kinds of selection situations, and the amount of writing about them is reflective of their popularity and importance. Often the interview is intended to serve quite different purposes in different situations. Sometimes a face-to-face meeting be-

comes an element in the selection decision. At other times the interview is much more a sales device intended to improve the "yield" of desirable applicants. The interview is used more in employment than in admissions; consequently, most research and writing about interviews relates to their use in employment. Few colleges or graduate schools require interviews for all applicants, but medical schools usually interview all applicants who are seriously considered for admission.

Reliability of interviews. It is useful to excerpt some of the reliability evidence from the reviews cited and other available sources. For 22 traits or characteristics judged in interviews and reported by Wagner (1949), the median interrater correlation was .54. His data give the impression that intelligence, sociability, and submissiveness were judged with somewhat greater consistency than other factors. Moore and Lee (1974), however, conducted a study that did not support the suggestion that either intelligence or sociability is judged consistently. In this study, 34 graduate students in a business school were interviewed for a bank position by one of six experienced interviewers, and these interviews were recorded on videotape. The tapes were then viewed by 24 bank managers who made further ratings of the same type. An additional set of ratings was based on the pooled judgments of three of the managers following a group discussion of the tapes. A comparison of the interviewers' ratings and the pooled group ratings resulted in a median interrater correlation of only .42. The highest interrater correlation (for judgments of leadership) was .60. Somewhat lower correlations were obtained for intelligence (.25) and sociability (.44).

Validity of interviews. The median correlations for academic and nonacademic predictions over 11 studies reviewed by Breland (1981) suggest that neither academic nor nonacademic outcomes are accurately predicted by interviews. This was the case even though interviewers often had access to ancillary data on academic performance and test scores at the time the interviews were conducted. The median correlation for the prediction of academic outcomes from interviewing was only .15 and that for nonacademic outcomes only .10. Frederiksen (1954) conducted analyses suggesting that interviewers' judgments "water down" better data, and this may explain the lower correlations for interview judgments than what is usually attainable from data in the same folders used by the interviewers.

Acceptability of interviews. The interview is a very costly procedure both to the applicant and to the institution, but it is often viewed as an essential means of allowing both parties to communicate fully and put

their best foot forward. This economic factor may be a source of unfairness because all applicants cannot afford to travel to the campus. Many apply from great distances—even foreign countries. Nevertheless, the interview appears to be quite acceptable to many institutions and applicants. Practically all medical school applicants who survive an initial screening are interviewed prior to acceptance. Moreover, Burgess, Calkins, and Richards (1972) and Calkins et al. (1974) report data showing reasonably high correlations between selection decisions and interview ratings. Mendel and Tabb (1977) argue that the interview is a valuable recruiting instrument for dental schools. Possibly, such a use will become more important to undergraduate colleges in the next several years as the population of high school graduates declines. Even without such a stimulus, however, the selection interview seems to be well accepted even if it is sometimes onerous.

INTEREST MEASURES

Questions about student interests are commonly used in admissions. Often the "biographical inventories" used in research contain questions about interests. Indeed, application forms often ask a few questions about interests. The focus here is on the more formal interest measures, such as the well-known Strong Vocational Interest Blank (SVIB)—now known as the Strong–Campbell Interest Inventory (SCII)—the Kuder Preference Record, and other similar inventories that have been seriously considered for formal use in admissions work. Nonetheless, more brief assessments of interests are also included.

A central issue in interest measurement is whether or not a lengthy inventory is actually necessary. In the traditional psychometric view, answers to direct questions about interests are seen as unreliable, superficial, or unrealistic. In the case of younger persons, it is believed that insufficient knowledge about careers and the real world of work precludes accurate answers to direct questions about interests. In fact, distortions of career and work activities obtained from television, books, peers, and even parents can often stimulate interest or disinterest in a misleading way. It is for these reasons that scientific approaches to interest measurement request responses to a wide variety of activities of possible interest, and these responses are empirically keyed to specific occupations or areas of interest.

The other basic approach to interest assessment simply asks the respondent to express his or her interests directly. Dolliver (1969) and Whitney (1969), in reviews of the SVIB and other interest inventories, come to the conclusion that the predictive validity of expressed in-

terests is at least as great as that for lengthy inventories. Katz (1972), moreover, points out that the factor structures of expressed interest ratings are virtually identical to those of inventory scales, and that by early adulthood "interests seem to occupy a rather well-integrated and coherent territory in the individual's awareness" (page 1465). Baird (1976) also presents a particularly strong case for expressed interests.

Reliability of interest measures. Carefully developed interest inventories have good reliabilities. Anastasi (1976) reports median retest reliabilities over a 30-day period for the SVIB in the high .80s, and long-term stability correlations in the .60s and .70s. Clendenen (1972) reports test-retest correlations of .89 for the SVIB basic interest scales over short time spans and of .65 (for adults) and .56 (for teenagers) over long time intervals. She also notes that the SVIB-W, for women, is somewhat lacking in data: available test-retest groups are small, with a median reliability of .68 for two groups (one with a 4-year time interval and the other with a 15-year interval). A test-retest reliability of .53 is noted by Clendenen for freshmen tested 26 years later.

For the Vocational Preference Inventory (VPI), Nichols (1966) obtained reliability estimates of .82 for a scale developed for grade prediction and of .88 for a scale developed for the prediction of extracurricular achievement. Baird (1969*b*) reports reliabilities of from .57 to .89 for college freshmen and from .50 to .89 for women. For the Kuder General Interest Scales (KGIS), Lohnes (1972) reports that reliabilities for all scales are above .70.

Validity of interest measures. Baird (1976) argues the case for directly expressed interests as opposed to elaborate measures of interest. He cites evidence that, even though the reliability of the SVIB exceeds that for expressed interests, the predictive validity of the latter is at least as great as that of the SVIB. Where direct comparisons of the prediction of occupational choice have been made, he observes, in no case was the SVIB more accurate. Baird also points out that Strong himself obtained correlations of .72 for SVIB and .69 for freshman choice of major field as a predictor of occupation 19 years later—certainly not an important difference, although the two types of information may complement one another. Baird also describes other studies comparing expressed interests to the Kuder Preference Record, Holland's VPI, and other formal measures, and he concludes that it is, in fact, surprising that haphazardly constructed expressed interests questions stand up so well against carefully constructed interest measures.

Breland (1981) summarizes several studies reporting validity co-

efficients for various interest measures as predictors of both academic and nonacademic outcomes. Both direct and indirect measures of interests are considered, and no superiority for the inventories is indicated. Overall, the median correlations suggest that interest measures are better for predicting nonacademic outcomes (median $r = .26$) than for predicting academic outcomes (median $r = .12$).

Interest measures or direct indicators of interest would also seem to be useful as predictors of persistence, although no good evidence on this point is found in Breland's review. Strong interests in a particular subject area or occupation seem very likely related to a tendency to remain in that major field of study and to persist to employment in the occupation.

Clearly, interest measures are useful in monitoring and influencing diversity within institutions. Expressions of major field choices are often used to determine if an applicant fits an enrollment need. In this way institutions can better match student enrollment and faculty interests, if that is an important objective. Another use of interests could be to achieve a balance among different types of students—or to move an institution in some desired direction with respect to the enrollment of different types of students.

Acceptability of interest measures. Directly expressed interests have some obvious advantages over formal interest inventories in regard to acceptability. They are inexpensive to develop, can be brief enough to add to a routine student questionnaire, and they are not likely to be viewed as an invasion of privacy. Moreover, they require much less of the student's time to complete. Interests can of course be faked, but if they are used primarily for guidance and to improve retention and institutional diversity, the kind of faking required to enhance admission is not altogether obvious to the student.

PERSONALITY MEASURES

In conventional psychometric terminology, personality measures are instruments that intend to assess emotional, motivational, interpersonal, and attitudinal characteristics of individuals. Although some writers include interests in the domain of personality (e.g., Anastasi 1976; Messick 1979), interests have been treated separately in this review because the relevance of interests in admissions and the implications for their use are somewhat different from those for personality measures. It is one thing to ask an applicant to an educational program

to state his or her interests, but another to probe more deeply into the subtleties of emotions, motives, interpersonal relationships, and attitudes.

Messick (1967) reviewed personality measurement with respect to its potential as a predictor of college performance. Two major questions were posed: (1) Are personality tests any good as measures of the purported personality characteristics? (2) What should these tests be used for? The first question was viewed as a scientific one and the second as an ethical one. The scientific question was approached from the perspectives of reliability and validity. The ethical question was approached by posing specific questions concerning the use of personality tests in college admissions. The scientific question was answered by describing evidence on validity and reliability. It was concluded that many measures were available but none measured up adequately against the psychometric standards applied. The ethical question was not answered directly, but it was suggested in conclusion that, even if empirical validity could be established for a personality measure, this would not be enough. One example of the ethical dilemma was illustrated with a question of this type: If it were found that docile, submissive students received higher grades in college, should a preference be given to such students in admission? Interestingly, a review of the research on personality and academic attainment by Entwistle (1972) did, in fact, conclude that success at the university level was associated with introversion. Entwistle notes, however, that the relationship differs with respect to intellectual level, type of institution, and the subject studied.

In a statement on the use of personality measures, the College Board (1963) concludes that:

> . . . no existing personality tests known to the Board seems to have been sufficiently studied to warrant the acceptance of very serious risks that would certainly attend the actual use of such tests in making admissions decisions [page 22].

Kendrick (1964) comments on the confusion of ideas, opinions, superstitions, and emotions that entangle the use of personality measures. He describes some amusing personal experiences with such devices, and suggests that before they are seriously considered for use in admissions, a careful analysis of the intended outcomes from such use first be conducted. Kendrick also offers proposals for specific activities that might clarify the potential utility of personality measures for individual colleges.

In a recent review, Messick (1979) considers the potential educational impact of noncognitive personal characteristics with particular reference to problems in their measurement. Several functions of noncognitive measures were considered including guidance, selection, placement, instruction, and education. The paper emphasizes the positive functions of those measures, but it also recognizes pitfalls that may invite misuse.

Reliability of personality measures. Given the wide range and assortment of personality measures, it is not surprising that reliabilities vary a great deal from one instrument to the next and, within instruments, from one scale to the next. The measures most commonly used in admissions research appear to have reasonable reliabilities in the sense of internal consistency; however, test-retest (stability) evidence is spotty.

Validity of personality measures. A summarization of results of 14 published studies in which a number of different samples were used to correlate a personality measure with a later outcome, academic or nonacademic, was conducted by Breland (1981). The median correlations suggest that personality measures are more effective in the prediction of academic outcomes than in the prediction of nonacademic outcomes. The overall median predictive correlation for academic outcomes is .28 and that for nonacademic outcomes .13. Moreover, Breland has shown that the median improvement in predictive correlation (beyond what is attainable with the traditional academic variables) is only about .02.

Acceptability of personality measures. There are certainly some ethical questions concerning the use of personality measures in admissions. Another important question relates to the public acceptance. Few psychological developments have aroused the public's ire more than personality measures. With an expected decline in the population of college-age students, some colleges may be reluctant to add an additional hurdle to going to college. The use of personality measures could introduce an additional deterrent to applications because of problems of public acceptance.

PEER RATINGS

One approach to personality assessment is the peer rating or peer nomination; however, much more than personality is usually assessed by this procedure. It is most often used with groups in training programs toward the end of the program when trainees are asked to rate all

other trainees on certain attributes believed to be important. Alternatively, trainees may be asked simply to "nominate" three or more classmates as most likely to be successful in the work, more liked by others, or some other attribute. The technique has been extensively used in military training centers such as Officer Candidate School (OCS).

Reliability of peer ratings. Lewin and Zwany (1976), in a review of peer ratings, report a number of studies of reliability. Military trainee split-half estimates of about .90 for leadership nominations have been obtained after only a few days of interaction among the trainees. Tupes (1957), in a study of 790 OCS graduates who had known each other from 3 weeks to 12 months, obtained internal consistency estimates for ratings between .8 and .9 covering the extremes of acquaintanceship. Hollander (1957, 1965) obtained split-half reliabilities in a naval training setting based on ratings obtained on the fifth day after arrival. These reliabilities were estimated for four separate administrations and were all approximately .95. Waters and Waters (1970) obtained peer ratings from 53 salesmen who had known each other for only three weeks and estimated interrater reliabilities between .8 and .9. Therefore, the reliability estimates reported in studies of peer ratings or nominations are usually quite high. However, Smith (1967) demonstrated that a relatively large number of raters is required to obtain these high reliabilities. Smith computed split-half estimates of peer ratings obtained using Cattell's 42 bipolar traits for 61 different samples where the number of raters ranged from about 6 to more than 30. With 15 or more raters, the median split-half estimate is .83. For more than 20 raters, reliability estimates are about the same, but for less than 10 raters split-half estimates range from .40 to .70.

Validity of peer ratings. Most studies of peer ratings have been conducted in military or business settings, but they seem relevant to higher education admissions because the criteria represent real-life outcomes—and some of these outcomes have been determined over a relatively long term. For example, in the Naval Air Training Command, Berkshire (1958) found that peer nominations in preflight training were an exceptionally good predictor of officer performance and accident proneness in fleet operations two years later. In their review, Lewin and Zwany (1976) summarized 13 studies where nonacademic outcomes in military and business settings were predicted with an impressive median correlation of .33. The specific outcomes predicted included officer success as judged by superiors, combat ratings, number of promotions received by managers, and sales trainee ratings.

Acceptability of peer ratings. As indicated in the discussion of the reliability of peer ratings, a substantial number of peers is required to obtain reliable ratings—probably in excess of 15. In training programs, no problem is usually encountered in obtaining these numbers. But a question is raised about the workability of peer nominations in the normal academic admissions situation. It is easy enough to obtain three recommendations, and it might be also as easy to obtain three ratings from peers. Ignoring the problem of whether the peer information obtained in this way can be trusted to be accurate, the number of ratings is far from sufficient to yield high reliability. Peer ratings during college have been used in research studies, however, as an outcome to be predicted by admissions procedures (see, for example, Hackman and Taber (1979).

SUMMARY OF PRIOR EVIDENCE ON PERSONAL QUALITIES

Breland (1981) has assembled evidence on the utility of a number of procedures from a wide range of admission settings. Studies of admissions procedures for colleges, graduate schools, law schools, business schools, and medical schools were included, as were studies in industrial, business, military, and governmental settings. Medical school admissions research, in particular, was found to be a rich source of experience with personal qualities in selection. Table 3.1 presents a summary of evidence of the utility of five well-researched procedures for predicting academic and nonacademic outcomes. Note that personal statements and peer ratings, discussed above, are excluded because of the limited research on their use in admissions.

Three things are of special interest in Table 3.1. First, only two of the procedures, biographical data and personality measures, stand out as predictors of academic outcomes. Second, only two of the procedures, biographical data and interest measures, stand out as predictors of nonacademic outcomes. Third, those procedures that one might expect to predict nonacademic outcomes—recommendations, interviews, and personality measures—may be better for the prediction of academic outcomes. It is important to note, however, that these validity coefficients do not necessarily mean that the measure in question adds useful information beyond those measures that may be otherwise available. It often happens, particularly in the case of academic criteria, that an apparently valid predictor actually adds little or nothing to the usual predictors, test scores and grades.

Perhaps as important as predictive validity is whether or not the procedures reviewed are acceptable to the institutions and to the students who use them. As for biographical data, it is clear that one cannot

Table 3.1 Prediction of Academic and Nonacademic Outcomes

Procedure Type	*Median Predictive Correlations*	
	Academic Outcomes	*Nonacademic Outcomes*
Biographical data	.43	.35
Recommendations	.20	.18
Interviews	.15	.10
Interest measures	.12	.26
Personality measures	.28	.13

Source: Breland (1981).

summarize their acceptability as a part of admissions procedures unless the type of biographical data are specified. Moreover, whether or not a particular type of biographical data is acceptable depends upon the outcome of interest. An applicant's accomplishments and activities in the past certainly would appear to be acceptable to most institutions and to students as information relevant to decisions in admissions. When these accomplishments and activities are supplied by the applicant without any verification of their accuracy from other persons, acceptability becomes more of a question. The usual demographic data—sex, ethnicity, state of residence, and the like—seem quite acceptable if solicited in the proper manner. An institution may wish to use such information to provide balance and diversity and to plan for needed facilities and other resources. Some information may be acceptable for collection during admissions but not acceptable for making admissions decisions. Marital status and parental income, for example, might not be acceptable for use in making decisions on acceptance, even though they would be useful for other purposes. Whether or not it is acceptable to use empirical keying techniques with biographical inventories depends upon the content of the inventory. The content must be relevant to what is expected of a student in a given academic program if it is to receive some kind of weighting in an admissions index based on a biographical inventory. However, the most acceptable kind of biographical information may be that which is simply used as is without any kind of empirical weighting scheme.

Interviews are presently an accepted part of the admissions system. They aid the institution in public relations and provide an additional source of information, although the expense is considerable and there may be instances of adverse equity. Recommendations have some of the same characteristics as interviews. They are an ingrained part of the system but come at some expense of effort and are often questioned on grounds of fairness or believability.

There are problems of acceptability with most formal inventories

that purport to measure interests or personality. The former are questionable improvements over brief ratings by applicants. The latter usually raise troublesome ethical issues. Any type of self-report scale is easy to fake and is therefore much more likely to be useful in recruitment guidance than in selective admissions.

What general impressions does a review of research literature leave one with regarding the usefulness of such measures? Biographical data often reflect personal qualities, many of which can be assessed with satisfactory reliability, and many of which have potential validity on either rational or empirical grounds, with respect to academic or nonacademic objectives of institutions. Some types of information may pose problems of acceptability, but as a class, biographical data are widely used and accepted in the admissions process and show the greatest promise for research and development.

Recent evidence often indicates that recommendations and interviews have either questionable or clearly negligible reliability and validity. These measures are often an accepted part of the admissions process because of tradition or the fact that they serve other interests of the parties. The effort that goes into these measures and the possible unanticipated effects they may have speak for more research to clarify their role.

While personality measures are rightly viewed with reluctance and suspicion, other measures of personal orientation show more promise. In particular, interest measures can be useful in admissions if economically conducted and well targeted to educational and career goals of students.

In general, the research literature on these various measures of personal qualities suggests more promise in theory than has been achieved in practice. This is partly because such measures have been researched to a much lesser extent than traditional academic measures. It is also possibly due to a failure to study the use of such measures in a sufficiently broad context of the multiple objectives of institutions and the separable aspects of the recruitment-selection-education process.

4

Description of the Study

In the summer of 1978, conversations were initiated with a group of some 18 private colleges that use the Common Application form exclusively (see Appendix A). This group of institutions provided a unique context for a cooperative study of personal qualities in admissions because they use an application form that provides (1) a common data base and (2) a wide range of objective as well as narrative information relevant to the study. Nine institutions met the minimum requirements for number of entering freshmen, were interested, and were invited to participate: Bucknell University, Colgate University, Hartwick College, Kalamazoo College, Kenyon College, Occidental College, Ohio Wesleyan University, University of Richmond, and Williams College.

Information concerning the personal qualities of applicants to these colleges was obtained from background questions, academic measures, research staff ratings of different types of accomplishments and experiences in secondary school, narrative evidence such as a personal statement and references from counselors and teachers, and special questionnaires concerning the students' goals and experiences in college. Also, college staff provided some 20 ratings for each applicant.

ORGANIZATION AND PLAN

Three types of studies were planned as illustrated in Figure 4.1. The present report covers admissions studies, in which academic and personal qualities are examined in relation to policy and practice in re-

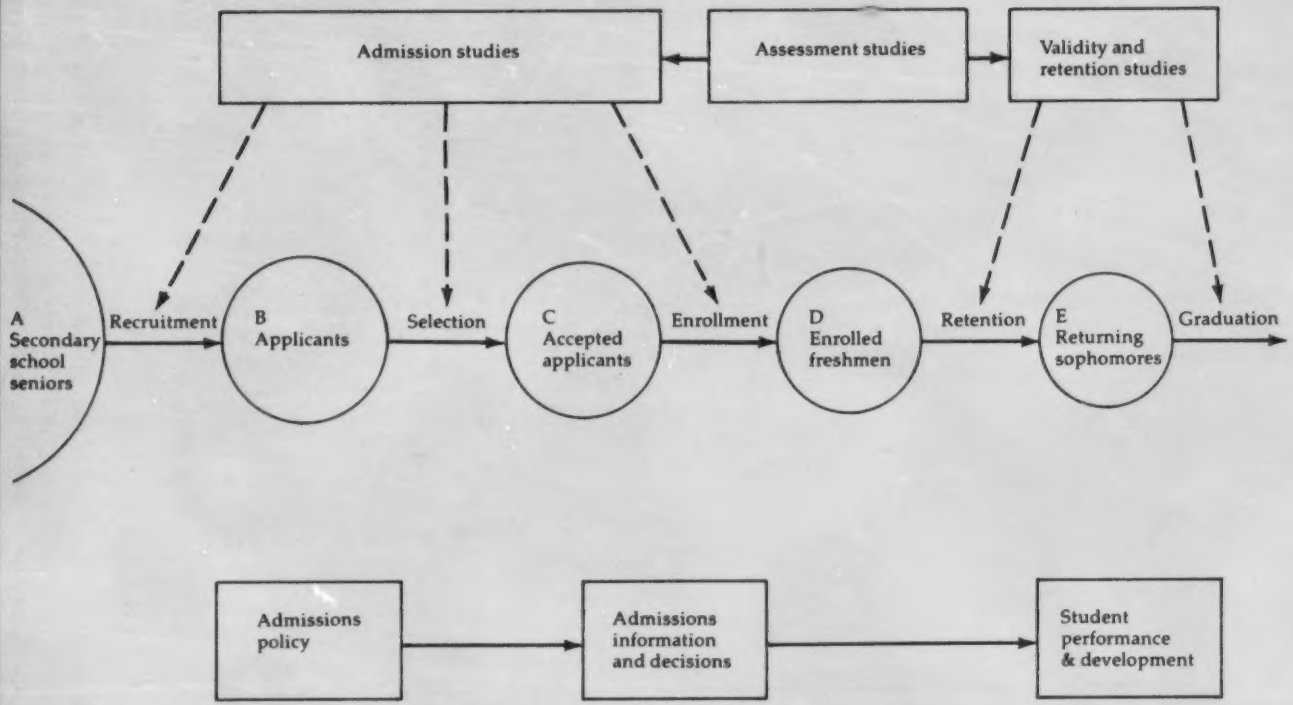

Figure 4.1 Studies of personal qualities in admissions.

cruitment, selection, and enrollment. This volume also reports part of the planned validity and retention studies, in which personal qualities are examined in relation to success and persistence through the freshman year. We will extend those studies through the senior year in a later report and add a series of "assessment studies" in order to seek ways to improve the reliability and soundness of judgments routinely made in admissions.

The study began in December of 1978 with the initial collection of admissions data on approximately 25,000 applicants to the nine colleges. Following admission in the fall of 1979, the cohort of some 5,000 matriculating students were followed to the end of their freshman year. A future follow-up is planned for the fall of their senior year to obtain from students and faculty information on performance and experience throughout the students' college years.

Admissions studies

The admissions studies concern the relation of personal qualities to particular admissions actions: who files an application, who is selected, and who enrolls. These studies began with each institution preparing a description of its admissions policy and practice. For applicants, three basic types of information were derived from the Common Application form and other readily available material: (1) objective data and easily coded information, (2) project staff ratings of various types of experience and accomplishments represented in the application, and (3) judgments by institutional admissions staff of how the applicant's personal qualities relate to institutional admissions objectives. Through multivariate analysis we examined how such information about candidates was actually related to decisions of students and institutions. Previous analyses of this type were reported by Folger, Astin, and Bayer (1970). More recently, Wilson (1978) studied the subject. Other relevant studies are cited in Chapter 3. Our method of analysis differs from previous studies in two important respects. First, an advanced statistical technique called logistic regression was used to study the relationship between personal qualities and subsequent events. Second, a residual model was used to examine the extent to which students with particular personal qualities were selected or if they performed differently than would be expected on the basis of traditional academic measures. This model seems to simulate the actual admissions process more closely than the familiar multivariate statistical methods. An important related issue is the extent to which the outcomes of the admissions process are consistent with the intentions and objectives of

the institutions. Such analyses were undertaken for individual institutions, across institutions, and within certain groups of special interest.

Validity and retention studies

The validity and retention studies have several objectives. One is to determine in each institution which personal qualities predict subsequent academic performance (i.e., grades) of students. Another is to examine the extent to which personal qualities add to traditional measures in anticipating other forms of success in college. A third objective is to examine the extent to which personal qualities can be helpful in understanding and predicting persistence. The validity and retention studies start with faculty and staff judgment as to (1) what admissions measures are intrinsically valid for what reason, and (2) what the appropriate bases are for judging that students have performed successfully in college – both academically and nonacademically (e.g., the broad types of criteria considered by Anastasi, Meade, and Schneiders (1960); Taber and Hackman (1976); and Hackman and Taber (1979)). Preliminary indicators of success were collected in the spring of the freshman year, and results of analyses of those data are included here. During the cohorts' senior year, judgments concerning academic and nonacademic success will be reexamined in relation to judgments of personal qualities at admission.

Assessment studies

With appropriate samples of applicants, a variety of assessment studies will be undertaken to improve understanding of the strengths and weaknesses of subjectively judged personal qualities. These studies will involve statistical analysis of ratings, of the interrelations among measures, and of factors that appear to bias or influence the nature of such measures. Although a number of such studies are possible, the following are most likely to prove useful:

1. studies of the reliability of ratings and subjectively scored information
2. studies of the validity and relative merits of information concerning personal qualities
3. studies of cost-effective ways to solicit and evaluate information useful in admissions
4. analysis of the accuracy of student responses to the Common Application form (as compared to an independent source of information)

5. analysis of bias effects and differential adverse impact across different groups for different types of information.

Expected outcomes

The overall aim of the project is to achieve a deeper understanding of the relationship of recruitment and selection to effective educational development and retention. Toward this end the project has sought to determine how institutional policies and program practices can be usefully informed and improved by better understanding of the diverse characteristics of entering students and their experience at the college. It is hoped that one result will be to help expand our view of valued talent and how it might be developed more fully.

As to concrete results, we expect to learn more about what personal qualities usefully supplement academic measures in anticipating students' accomplishments and contributions that are important to the institution and its faculty, how colleges might better assess those qualities, how student goals can be heeded more effectively, and how colleges can more usefully connect recruitment, selection, and retention. In working with these nine institutions, the hope is to illustrate new approaches to admissions in order to foster an understanding of the process that will be useful to many other colleges as well.

Staff and steering committee roles

The analytic work and preparation of the major reports of the project were carried out by ETS staff. Staff and faculty of the nine institutions participated actively in rating the qualifications and performance of students, supplying data, preparing statements concerning institutional admissions policy, etc. The Steering Committee, composed of representatives of the participating institutions, is responsible for policy direction of the project and approves all work plans and reports. Special care has been exercised to protect individual and institutional privacy.

DATA COLLECTION AND PREPARATION

The procedures for obtaining and processing data reflected throughout the usual concerns for completeness of records, accuracy of retrieved information, and efficiency of handling. Additionally, there was a special concern for data security. The principal sources of data were

1. admissions policy statements prepared by the participating institutions

2. the Common Application form
3. routine admissions data retrieved from institutions but not on the Common Application form
4. institutional evaluations of applicants' personal and academic qualities (made especially for the project)
5. a fall 1979 entrance questionnaire and a spring 1980 follow-up questionnaire
6. criterion data on student performance and persistence.

Admissions policy statements

A key element in evaluating the usefulness and relevance of personal qualities in admissions is to relate such qualities to the objectives and values of the individual institutions as they are expressed in admissions policy and procedures. The steering committee and project staff worked out a common outline for a statement that would explain those aspects of admissions policy that are important to each institution and how policy intentions are translated into actual practice. Participating institutions prepared a description based on that outline. The description focused particularly on the criteria the institutions considered important in judging applicants and performance—giving special attention to the rationale as well as to the means of assessment.

The Common Application form

The Common Application form (Appendix A) is used by some 100 undergraduate colleges in varying degrees. Its primary purpose is to ease the application process for the student. Once completed, copies can be mailed to any institution that accepts the form. Some institutions may require supplemental information, and some have special adaptations of the form. The nine institutions participating in the Personal Qualities Project used only the Common Application form and accepted no other. The data obtained for these institutions are thus comparable and especially valuable for a project of this type. The principal types of data obtained from the Common Application form included personal and family characteristics, educational background, ties with the college, probable major and career interest, academic honors, extracurricular activities, work experience, a personal statement, a school report, and a teacher reference.

Institutional retrieval

Other admissions data not obtained from the Common Application form were retrieved by the institution from a number of sources as part

of the normal application process. These data included high school performance, test scores, school background, financial aid information, and admission actions by the admissions staff. Usually this and other information is recorded and updated periodically on computer tapes maintained by the institution. Those institutions having computer files made special tapes using a common, agreed-upon format. Institutions not having computer files sent comparable information in list form that was then keypunched to produce equivalent data tapes.

Institutional evaluations

A special College Rating Form (see Appendix A) was developed by the project staff and the steering committee. The purpose of this form was to obtain judgments by the staffs of the participating institutions—typically admissions officers, although some faculty were involved. Ratings were made of the qualifications of each candidate in relation to the established admissions policy and objectives of the institution. These ratings included holistic evaluations routinely made by two or more staff members during their usual reading of the application. In addition to these holistic ratings, admissions staffs were asked to flag any of 15 kinds of student talents, personal attributes, and other considerations that argued for admission in individual cases. Finally, space was reserved on the College Rating Form for special information of interest to each institution. Ratings were completed in the normal course of reading folders for fall 1979 applicants. Each of the 25,000 applicants was rated once by a college staff member. In addition, each college completed an independent second rating by another staff member for a representative sample of 300 applicants.

Entrance questionnaire

An entrance questionnaire (Appendix A) was administered by the admissions staff by mail or when students reported for registration in the fall of 1979. Special efforts were made to maximize the completeness of data obtained. The purpose of the fall questionnaire was to gather information on the students' personal goals, their reasons for attending this particular college, and their academic plans. These data are usually unavailable from regular application materials, but are especially important for this research because recruitment and retention are much affected by student expectation and experience. Furthermore, the project was intended to contribute to a better understanding of effective student development in line with personal as well as institutional goals.

Criterion data

A questionnaire was administered toward the end of the freshman year as a follow-up to the fall questionnaire. Students were asked about their experience during the year and to reflect on their reasons for coming to the particular college and their progress toward their educational goals. In addition, data were collected on academic performance, persistence, and nominations by fellow students for unusual achievement during the first year.

Data handling and security

Federal law requires research procedures and practices to ensure personal privacy. (See technical note 1 in Appendix C.) In accordance with these requirements, procedures routinely used at Educational Testing Service were followed in addition to special safeguards instituted for this study:

1. The Personal Qualities Project was screened at the proposal stage by a standing committee made up of senior researchers, lawyers, and other specialists whose responsibility is to ensure that research projects do not in any way endanger the privacy of individuals or institutions.
2. Raw data arriving at Educational Testing Service were coded as quickly as possible to extract essential information, and raw data forms were destroyed as soon as possible.
3. All data forms and tapes were stored in secure areas.
4. Computer files of two types were created to prevent the linkage of names and other identifying information with personal data. A working file used for data analyses contains no identifying information except for project numbers specific to the study. A link file, kept in a locked vault except when in active use, provides a linkage between the project number and individual identifying information.

Data coding and editing

The usual keypunch and verification procedures often require considerable movement of raw data and a general lack of control at the data entry stage of a research project. Careful consideration of security and data preparation needs of a study of this size suggested that traditional keypunch procedures would not suffice. In addition, significant portions of the data submitted from the nine institutions were not completely uniform, even though all used the Common Application form.

Institutions submitted parts of their data in somewhat different formats, and in some cases colleges added special optional data. In brief, the data coming from each institution needed custom procedures for coding and editing under carefully controlled conditions.

Given these difficulties, it was decided to develop an interactive mode of data entry and editing using a set of computer terminals housed in the same secure room where raw data were kept. With this procedure, raw data need not be removed from the secure room, and custom computer programs could be written to check the accuracy of coding as it was being done. Most coding errors were corrected immediately; otherwise, the programs would not allow further data entry to proceed.

Ratings

Some of the most important information on the student's application came in the form of narrative material or answers to open-ended questions (e.g., descriptions of activities, the personal statement, references, work experience, and so forth). In order to analyze such information systematically, it was necessary to develop a series of rating scales that would accurately reflect a given applicant's position with respect to a particular type of accomplishment or experience. Twelve such rating scales were developed (measures 14–25 on page 59.). In each case these scales were carefully defined, tried out, and revised until experience indicated that the particular ratings could be made accurately. Project staff were trained to the point where ratings were reasonably consistent among raters.

Since it was not feasible to rate all 25,000 applicants, ratings were made for the following groups: a random sample of 500 applicants to each college, all freshmen entering each college, and all minority applicants. Whereas the ratings made by college staff were made holistically (i.e., based upon all information in the application), the project staff ratings were made independently insofar as possible. That is, care was taken to avoid "halo effects" such as knowledge of a student's background, academic qualifications, where he or she had applied, or whether the admissions decision was positive or negative.

Furthermore, each rating was based upon very specific descriptions of the meaning of each score level (1 to 5) with examples provided (see Appendix B). In addition, a common standard was used in rating extracurricular accomplishments: a 5 was reserved for unusual individual achievement involving recognition beyond the local community; a 4 was awarded for noteworthy local achievement or membership in a widely recognized group such as a state championship team; a 3 was

based on evidence of achievement beyond simple participation; a 2 implied no more than participation, while a 1 was used to indicate no participation.

MEASURES

The collected data were classified into these types of measures: application, academic achievement, personal achievement, background, college ratings, educational goals, reasons for college choice, education/career interests, freshman experience and performance. The application measures consisted of those variables that tend to categorize applicants, for example, acceptance versus rejection, whether financial aid was being offered, whether the applicant came for an interview, and the like. Academic achievement included the usual test scores, high school rank, and other academic variables. Personal achievement was represented by 11 ratings from the Common Application form information described previously. Background measures included a variety of items such as age, sex, ethnicity, and socioeconomic level. The college ratings included a number of flags for specific qualities, overall personal and academic ratings, and a rating of the interview if there was one. Educational goals and reasons for college choice came from questionnaire responses at matriculation. The measures describing freshman experience and performance came largely from the spring follow-up questionnaire. Following is a detailed list of all measures. Appendix B provides additional technical information where necessary. Measures followed by an asterisk were compiled for random samples of 500 applicants to each college, all freshmen, and all minority applicants.

Application

1. Accepted (admissions action)
2. Enrolled (student decision)
3. Aid applicant
4. Came for interview (optional in all colleges)
5. Sent work sample (also optional—art, writing, etc.)
6. Aid offered
7. Early-decision applicant
8. Multiple applicant (to two or more of the nine colleges)

Academic achievement

9. High school rank (HSR) (normalized; $\bar{x} = 50$)
10. SAT average (ACT equivalent where SAT not available)
11. Valedictorian (if class > 10)

12. Decile
13. Academic composite (SAT + HSR; $\bar{x} = 50$)
14. Academic honors*

Personal achievement

15. Community activities*
16. Athletic achievement*
17. Leadership*
18. Creative talent*
19. Follow-through*
20. Work extent*
21. Work level*
22. Statement – writing*
23. Statement – content*
24. School report*
25. Teacher reference*
26. Personal achievement (sum of variables 15–18, 21, 23, 24)*

Background

27. Age (as of December prior to entry)
28. Sex (female = 1; male = 0)
29. Ethnicity
30. Minority student (black, Hispanic, American Indian)
31. Disadvantaged*
32. Home state
33. Recruiting state (special recruiting effort)
34. Diversity state (geographic preference)
35. Region
36. Distance (home to college, based on Zip code)
37. High school type
38. Close-tie school (identified by college)
39. School size
40. Family status*
41. Number of siblings*
42. Parent occupation (1–7; prominent = 7)*
43. Parent education (1–7; highly educated = 7)*
44. Parent college (type attended)*
45. Socioeconomic level*
46. Alumni parent
47. Alumni sibling (in school or graduated)*
48. Alumni ties (yes for 46 or 47)*

College ratings. Variables 49–66 were based on items flagged on the College Rating Form – all scored 0–1.

Talent flags

49. Music, art, literary
50. Leadership, entrepreneur
51. Science and technology
52. Athletic
53. Other talent (e.g., high chess ranking)
54. Any talent flag

Attribute flags

55. Mature/well-directed
56. Overcame hardships
57. Significant work experience
58. Very good references
59. Intellectual orientation
60. Rich experiences
61. Cultural background
62. Any attribute flag

College interest flags

63. Important school/community
64. Strengthens tie
65. Fits enrollment need
66. Any college interest flag
67. Total flags
68. Interview rating (outstanding, good, standard)
69. Academic rating (5-point rating)
70. Personal rating (5-point rating)

Educational goals. See Question 1, fall questionnaire.

71. Liberal education
72. Intellectual skills
73. Moral values
74. Social awareness
75. Creative talents
76. Physical development
77. Leadership training
78. Personal relations
79. Social competence
80. Professional training
81. Practical skills
82. Career exploration

Reasons for college choice. (Twelve reasons selected for analysis identified by number.) See Question 2, fall questionnaire.

83. General academic reputation (1)
84. Campus beauty (27)
85. Social atmosphere (6)
86. Particular academic program (3)
87. Area of country (23)
88. Particular location (24)
89. Teaching emphasis (5)
90. Athletic facilities (30)
91. Favorable staff contact (32)
92. Rejected elsewhere (33)
93. School advice (12)
94. Financial aid offer (17)

Educational/career interests

95. Degree plans (see Question 4, fall questionnaire)
96. Probable major at time of application*
97. Probable major at time of matriculation (see Question 3, fall questionnaire)
98. Career interest*
99. Statement orientation*

Freshman experience and performance

100–111. Spring goals—importance
112–123. Spring goals—progress
124–136. Spring view of reasons for college choice
137. Freshman GPA (converted to 4.0 scale as necessary)
138. Peer nomination (see page 136 for wording)
139. Goal progress composite
140. Freshman dropout (not enrolled, fall of sophomore year)

SAMPLING AND ANALYTIC PROCEDURES

The number of applicants to each college and the extent of applicant overlap among the participating institutions is shown in Table 4.1. The total group numbers 24,543, although this table and succeeding analyses do not include some 1,000 applicants who were foreign students or whose applications were incomplete at the time all data were collected. The number of applicants varies considerably from college to college, but for most research purposes the groups are much larger than necessary to provide results that are reasonably stable for individual colleges.

Table 4.1 Number of Applicants to Each College and Extent of Overlap (Total $N = 24,543$)

	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL
Richmond	2,860	45	32	6	135	19	50	180	2
Hartwick		1,594	25	2	113	27	106	63	5
Kenyon			1,360	12	148	110	113	113	29
Occidental				1,168	5	17	14	7	5
Ohio Wesleyan					2,070	32	81	118	9
Williams						4,156	668	251	19
Colgate							4,944	780	14
Bucknell								5,400	13
Kalamazoo									991

Note. In tabular material, the nine colleges are referred to by the first three letters of their names.

Therefore sampling procedures were used to reduce the cost of coding, rating, and manipulating data without compromising the usefulness of the findings. The principal groups used for the analyses reported here were as follows.

All applicants. $N = 24,543$. From college to college the applicant pool varied from approximately 1,000 to 5,400. Essential information concerning academic ability, background characteristics, admission staff ratings, and admissions actions was recorded for this total group.

Applicant samples. $N = 4,500$ (500 from each college). Detailed research staff ratings and additional background information were coded for these samples that formed the basis for many of the analyses of admissions.

Nonoverlap sample. In order to provide one group of applicants for analyses across colleges, the samples of 500 applicants were pooled and multiple applicants were randomly assigned to only one of the colleges to which they applied. The resulting nonoverlapping sample consisted of 3,889 different individuals.

Freshmen. From college to college the number of entering freshmen varied from approximately 400 to 800. Complete data including all background measures and research staff ratings were recorded for all freshmen.

Freshman follow-up. The total follow-up group varied in size, depending upon what type of follow-up information was involved. Per-

sistence data were available for all 5,000 fershmen; data concerning students' experiences in college were available for some 3,400 who were in school in the second semester and returned the spring questionnaire.

A variety of analytic techniques were used, and these are explained in general terms as the results are presented. Those readers who are interested in technical detail will find further specification in Appendixes B and C. A study of this type generates a very large amount of tabular material. Only those tables of special interest have been included in the text; additional tables appear in Appendix D and in a Technical Supplement available from the author on request (see technical note 2). We assumed at the outset that colleges differ and that many of the important dynamics of admissions and the subsequent experiences of student bodies can be best understood on a college-by-college basis. Therefore, many of the analyses were done for individual colleges and presented together in order to illustrate similarities and differences.

5

The Diversity of Talent

What do students say about themselves in their applications to college?

My experience with debate has been a profound intellectual experience and so much more. Although I went to the Nationals, what was really important for me was a summer institute where the glimmerings of a philosophy within me were reinforced. I learned the true value of debate. I created my own arguments rather than regurgitating another's and researched my own evidence rather than accepting it blindly and out of context. The process became more important than the result.

Several experiences abroad have helped me develop my commitment to my Jewish heritage. I have participated in an intensive study program in Israel; I have lived on a kibbutz; I have had the indescribable experience of helping to rekindle an almost-extinguished spark in the souls of my Jewish relatives in Moscow.

Who am I? Well, I have a temper and a very sensitive personality. I like plays, almost all music, historic novels, some TV, some movies, very close friends, buttered pasta, soccer, groups that do fun and challenging things together, and sunny, windy days. I hate science, being lazy (I am), mud, eggs, tomatoes, indecision, reading, and waste. I am extremely straight and honest, I can be very immature at times, especially when mad or confused, but at other times I can be very mature so it usually evens out.

With enough effort a person can face the challenges that he meets. I started school in a special unit for the handicapped and for the past 11 years

> I have worked to lessen my physical dependence on others. I was elected president of the student body in elementary school; and finally I conquered attendance at a regular, large high school with two floors. I am now prepared to look at new challenges with enthusiasm.
>
> I have participated in the dramatic arts since I was 10 years old, working constantly in both community and school theater groups, and taking courses in acting whenever possible. My greatest asset is my voice. Because I am energetic and talkative, comedy is often easier for me than most people. I am working toward more control for serious acting.
>
> The relationship between a divorced parent and an only child is very special and cannot be duplicated in any other family situation. Although this environment is potentially more stressful, the emotional demands made upon both parties ensure a degree of maturity seldom attained in a more conventional lifestyle. . . . I hope the sensitivity that I have acquired to the harsher realities of life may benefit my fellow students as well as myself during our first sojourn away from home.

These excerpts from applicants' personal statements show the variety and complexity of experience, accomplishment, and talent that students bring with them to college. Despite their relatively young age, secondary school graduates often exhibit surprising breadth and depth in their insight and achievement. Students bring different cultural experiences, values, and aspirations—all potentially important in the educational experience. In addition, many applicants have personal characteristics or affiliations that may be important to the college.

A main objective of this study is to better understand how these diverse qualities relate to institutional objectives, the admissions process, and the students' development and priorities. But first, it is useful to describe briefly in this chapter the incidence of various applicant characteristics and accomplishments, how they vary across colleges, and how these colleges judge such qualities.

How should one characterize or assess diverse qualities, either for research purposes or college admissions? Some characteristics such as sex, high school rank, or home state are easy to ascribe, but often a student's experiences seem to defy any simple description. There is, of course, no completely satisfactory way to capture the complex qualities of applicants. In actual practice we try to describe a student in a number of shorthand ways and then examine the measures, especially what they seem to mean in relation to the subsequent educational experience of the student.

As described in the previous chapter, this study employs a wide variety of measures. It is useful to distinguish two broad categories. One is the wide assortment of characteristics, evaluations, evidence of

achievement, and so forth, gathered more or less independently from a variety of sources. Another type of measure is the evaluation of applicants by the college admissions staff; that is, the measures here called college ratings (variables 49–70). There are two important differences between college ratings and the other measures used to characterize the applicants. One is that college ratings are assigned while the admissions officer or committee member is looking at the whole folder, taking into account other factors in addition to the particular characteristic being noted. There are advantages to this, but a side effect is that the ratings so executed often influence one another unduly and in unknown ways. Another distinction is that college ratings are done within the frame of reference of a particular group of applicants and are not thereby comparable across colleges (i.e., a personal rating in College X is not necessarily comparable to a personal rating in College Y).

Because of these important differences, it is often useful to study college ratings and other, more independent measures separately and also to study how the former are related to the latter. Before discussing the college ratings, we look first at some key background characteristics and achievements of the applicants.

Table 5.1 shows profiles of applicants to each of the nine colleges. This display provides a useful normative framework for interpreting the admissions situation at these colleges: the general level of academic achievement among applicants, the incidence of various types of achievement, the personal and family background of the student, and so on. Appendix Tables D.1 and D.2 provide additional normative information on a pooled sample of applicants to all nine colleges.

The college profiles differ in several significant respects. Despite the general similarity of the participating colleges (all are private liberal arts institutions), there are substantial differences from college to college in the proportion of students with some background characteristics—particularly the number of students from private schools, from near or far away, with disadvantaged backgrounds, or with privileged parents.

The most marked differences among applicants lie in the measures of academic achievement. In school rank as well as admissions test scores, some of the colleges have substantially more highly qualified applicants than do others (proportionally, up to ten times as many). Given that significant disparity in the two traditional academic variables, Table 5.1 reveals a noteworthy fact.

If one looks at evidence of high personal achievement, there are substantial numbers of very talented students applying to all nine colleges. Table 5.2 shows in the overall group how many students scored at each level (1 to 5) of the research staff ratings based on information

Table 5.1 Profiles of Applicant Characteristics (Percentage of Applicants to Each College with the Characteristics Indicated)

Applicant Characteristic	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL	*Median*
Admissions (number of applicants)	2,860	1,594	1,360	1,168	2,070	4,156	4,944	5,400	991	
Aid applicant	11%	30%	31%	60%	39%	39%	45%	43%	44%	39%
Came for interview	28	30	43	42	33	46	26	34	20	33
Academic achievement										
SAT over 600	9	6	28	33	9	59	38	31	34	31
Rank in top decile	15	14	23	50	13	57	39	39	49	39
Personal achievement[a]										
Community achievement (4+)	4	4	5	8	6	7	7	7	7	7
Athletic achievement (4+)	33	28	28	27	30	33	42	35	26	30
School leadership (4+)	13	12	21	17	10	27	20	15	17	17
Creative talent (4+)	10	9	14	16	9	19	13	9	15	13
Follow-through (5)	11	11	19	10	10	20	25	20	11	11
Work extent (5)	10	15	10	7	11	14	12	14	11	11
Work level (5)	5	9	7	7	5	9	10	7	4	7
Personal statement – writing (5)	2	2	7	4	2	6	6	7	3	4
Personal statement – content (5)	4	7	10	5	5	13	9	11	4	7
School report (5)	6	5	10	9	6	15	12	9	6	9
Teacher report (5)	9	5	–	7	–	18	16	5	–	8
Background										
Women	52	59	41	49	48	43	40	42	47	47
Minorities	2	2	2	13	6	6	3	2	5	3
Disadvantaged	2	8	6	15	10	4	13	9	13	9
Local resident	10	6	4	38	7	1	3	1	19	6
Lives 400+ miles away	28	6	62	32	65	30	20	10	12	28
Private school	28	29	50	21	31	35	22	18	7	28
Close-tie school	9	47	27	14	24	11	25	30	25	25
Prominent parent	7	5	13	12	7	15	10	9	7	9
Highly educated parent	20	16	35	25	22	37	23	23	25	23
Parent from selective college	35	42	54	30	43	47	38	39	16	39
Alumni parent	5	0	7	4	5	4	3	3	3	4

a. High achievement is indicated by high scores on research ratings as noted. Dashes (–) indicate that data were not available. See technical note 3 for further details.

Table 5.2 Percentages of Applicants at Each Level in Research Staff Ratings of Personal Achievement

Personal Achievement	*Rating*				
	1	*2*	*3*	*4*	*5*
Community activities	45%	26%	23%	4%	2%
Athletic achievement	16	22	32	27	4
School leadership	21	18	45	16	1
Creative talent	34	24	29	11	2
Follow-through	3	16	39	27	15
Work extent	8	10	45	26	12
Work level	7	18	48	20	7
Personal statement – writing	0	6	45	45	4
Personal statement – content	3	15	48	27	7
School report	0	3	50	38	8
Teacher reference	0	3	52	35	10

Note. Table entries are percentages of applicants at each rating level. Data are based on samples of 500 from each institution.

reported in the students' applications. Four measures (community activities, athletic achievement, leadership, and creative talent) are of particular interest because they represent particular types of readily verifiable accomplishments. A rating of 4 indicates special local distinction; a 5 indicates recognition beyond the local community.

To a surprising degree, students who achieve ratings of 4 or 5 in these areas are spread almost evenly throughout the applicant groups of the nine colleges. This observation may have important implications regarding how we view talent and the size of the pool of talented students.

THE TALENT POOL

Colleges habitually seem to think of talent in terms of the students who have the highest school ranks and test scores. Other aspects of talent may be respected, but mainly as a secondary consideration. To what extent can we enlarge the talent pool by considering more explicitly accomplishments and positive credentials in addition to the two traditional academic measures?

To answer that question about minority students, we identified all minority applicants ($N = 804$) to these colleges (only one application was randomly considered for those filing more than one) and then focused only on those who were rejected. If we searched among these rejected minority applicants ($N = 264$) for overlooked talent, how many talented students might we find if talent is defined as high academic achieve-

ment or high personal achievement? For the purposes of this analysis, high academic achievement was defined as a rating of 4 or 5 on academic honors, or being in the top third of the SAT score distribution or in the top third of the school rank distribution. High personal achievement was defined as a rating of 4 or 5 on any of the personal achievement variables (15 through 25, excluding work extent, variable 20).

The search produced 33 applicants (13 percent) with high academic achievement and an additional 167 (63 percent) with high personal achievement. It is clear that if a college is looking for additional minority students who are not already wooed by another institution, it is much more likely to find them by seeking evidence of high personal achievement rather than high academic achievement.

But we might reasonably ask, are these 167 students with evidence of high personal achievement sufficiently able academically to make satisfactory grades if they applied and were admitted to another college? An accurate answer to that question would depend on where they applied and would have to be based on actual student experience. However, some indication is provided by considering how many of these 167 students have an academic composite comparable with that of at least some of the students already admitted to the nine colleges—say at a minimum level where the probability of an applicant being accepted is normally at least .25, or 1 in 4. Many of these students would qualify for admission, as shown by these percentages of the rejects with high personal achievements who would meet minimum academic requirements for admission:

Richmond	42%	Williams	0%
Hartwick	86	Colgate	5
Kenyon	62	Bucknell	2
Occidental	42	Kalamazoo	67
Ohio Wesleyan	98		

This analysis illustrates that the number of people considered talented depends not only on the level of the standard set but also on how narrowly or broadly one perceives the talent.

COLLEGE RATINGS

In evaluating applications, the admissions staff at each college made two types of ratings as described in the previous chapter. One was to flag any of a series of talents, unusual attributes, or characteristics of interest to the college that appeared to be important enough to recom-

mend admitting the student. This was usually a stringently applied criterion. As Figure 5.1 shows, many students received no flags; those who did, seldom received more than one or two. In each of the three broad areas shown in the figure some 20 to 25 percent of the applicants were flagged on any one characteristic (i.e., overall 25 percent of the applicants provided evidence of some talent or accomplishment that merited special consideration in the admissions decision).

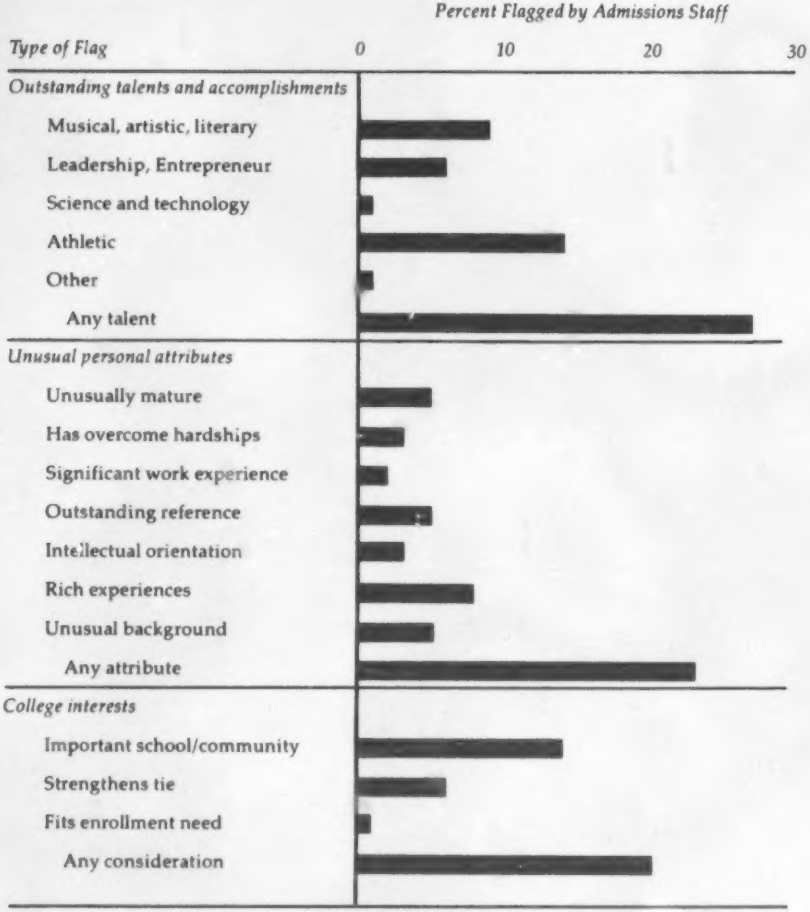

Figure 5.1 Percentage of applicants flagged as having specific personal qualities that argue for admission (based on nonoverlapping sample of applicants; $N = 3889$).

Correlations between these flags and other measures indicate what the admissions staff was looking for when they flagged applicant folders. For example, the special talent flag was most closely associated with follow-through—a research staff rating that indicated the extent to which a candidate showed persistent effort and significant accomplishment in several areas of personal achievement. Applicants who were thought to have personal attributes meriting special attention were most often minority students, or students with high interview ratings or outstanding school references. The college interest flag was most often associated with geographic diversity or alumni ties.

Figure 5.2 illustrates that these ratings are not strictly comparable from college to college. Some admissions staffs seemed mainly concerned with special talents and accomplishments, others with unusual attributes, and so on. These differences in rating practices among colleges are not reflected in actual admissions preferences, however, as is indicated by a comparison of Figure 5.2 and Table 6.5.

Each college also rated each applicant on a five-point academic scale and a five-point personal scale. In all nine colleges, the percentages of applicants rated at each point on these scales were as follows:

	1	*2*	*3*	*4*	*5*
Academic rating	9%	27%	36%	22%	6%
Personal rating	1	17	48	30	5

The level of these ratings varied somewhat from college to college, partly because of varying practices in rating applicants for admissions purposes. Personal and academic ratings typically play an important role in these institutions in reaching judicious admissions decisions that take into account all important considerations. In forthcoming work of the project, the characteristics of the academic and personal ratings will be examined more closely. It is, however, useful to consider briefly what seems to influence these ratings since in later sections of this book we will investigate the relationship of the ratings to admissions decisions and initial performance in college.

The academic rating is predicted quite well by academic achievement measures, with other measures playing a minor role. The academic rating is not synonymous with the academic achievement measures, however, and it is not yet clear whether the academic rating assigned by the college does a better or poorer job of representing academic competence than would a simple composite of school rank and test scores. The personal rating is considerably less well predicted by background and achievement measures than is the academic rating. Personal achieve-

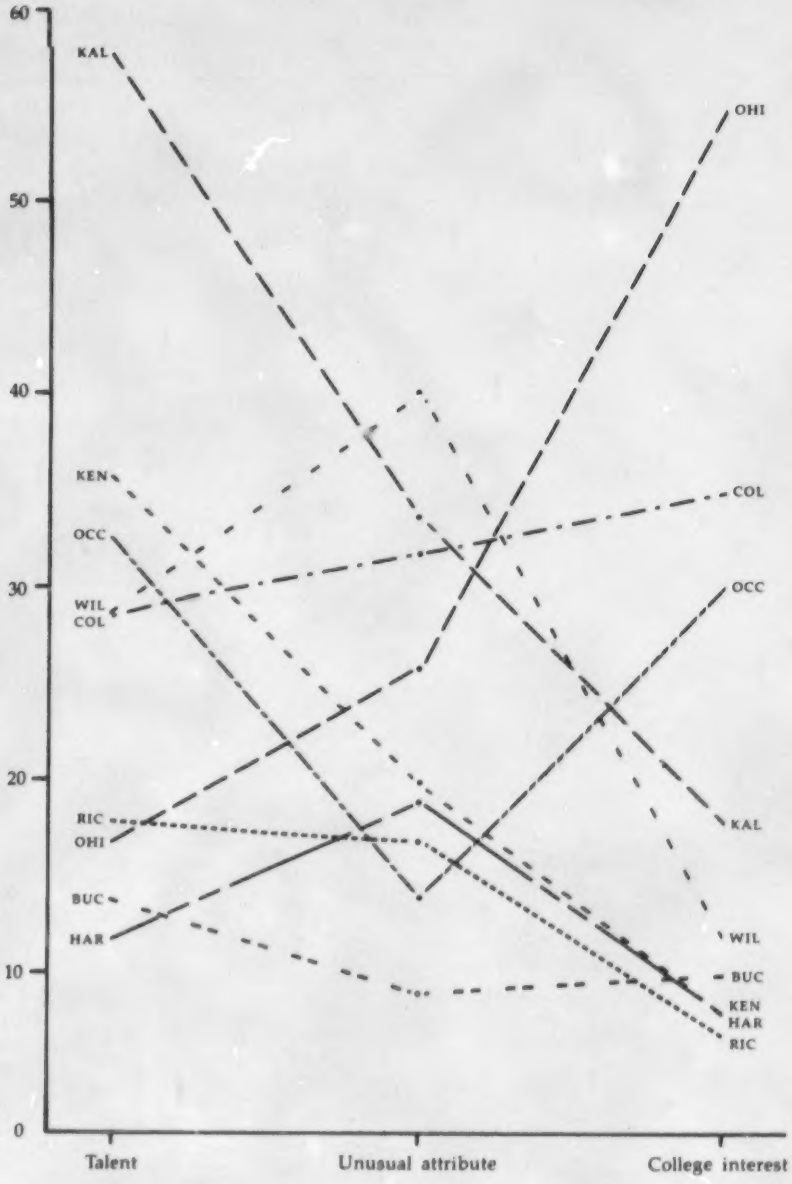

Figure 5.2 Percentage of applicants flagged as having any of three types of personal qualities that argue especially for admission. (Based on samples of 500 applicants for each college.)

ment measures seem to have the greatest influence on the personal rating, especially athletic achievement, leadership, the school report, and the extent to which the student has persisted successfully in particular extracurricular activities (i.e., follow-through). On the other hand, academic achievement received some weight in the assignment of personal ratings in most colleges.

In this chapter we have given a brief introduction to the characteristics of the 25,000 applicants and how they are rated by the college admissions staffs. The total group of applicants goes through two sortings to determine which students attend which college. One sorting is the college selection process; another is the self-selection process. The next two chapters examine how personal qualities appear to influence these two types of selection.

6

Institutional Selection—Personal Qualities in Admissions Decisions

Anyone at all familiar with college admissions realizes it is a complex process in which many factors are taken into account, often in ways not readily articulated. How can one make sense of the myriad personal qualities that come into play? In this study we have used an approach to the problem that offers considerable analytic power, recognizably at some expense. Various techniques have been used to rate, categorize, or otherwise quantify complex qualities in order to study systematically how these qualities relate to selection decisions. What is lost in some oversimplifying may be gained in new understanding of the process.

The basic statistical strategy is to see how well we can predict or account for admissions decisions and thereby determine how much influence different student characteristics seem to have in selection. The purpose is not merely to reveal why some applicants are accepted and others are not, but to provide a better basis for determining whether admissions practices adequately reflect the intended institutional policy. That is, part of our objective is to discover better methods whereby colleges can know whether they are emphasizing in their admissions work the student qualities they most want and that are best likely to serve the objectives of the institution.

Figure 6.1 shows the outcome of the admissions process during 1979 for the nine institutions participating in the Personal Qualities Project. While the lighter bars indicate a fairly constant yield rate due to self-selection (the subject of the next chapter), the darker bars show considerable variation in the acceptance rate from college to college.

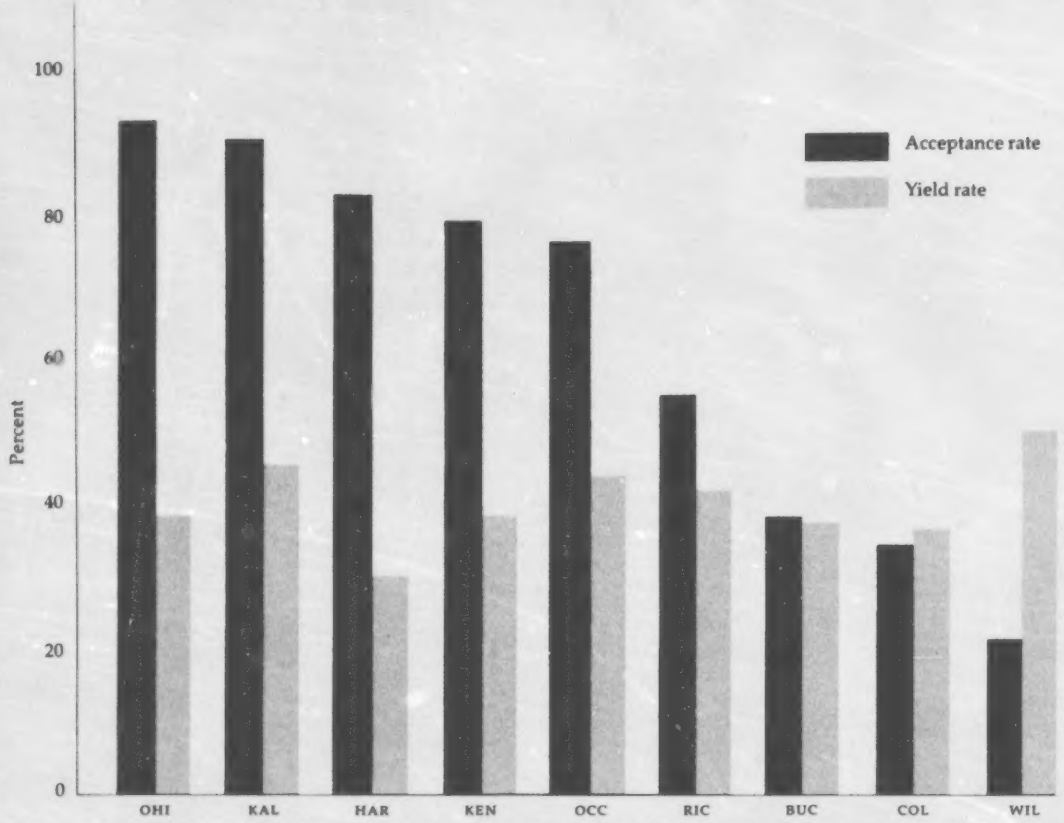

Figure 6.1 Acceptance rate (percentage of applicants accepted) and yield rate (percentage of accepted applicants who enroll) for each college.

At one extreme (Williams), relatively few students are accepted, and the selection process is especially concerned with choosing among an excess of well-qualified applicants. At the other extreme (Ohio Wesleyan), most are accepted, and selection is especially concerned with identifying a limited number of applicants who are *not* likely to succeed or for other reasons may not find the institution a good learning environment. Other institutions range in between, sharing to some degree both these problems in selecting a freshman class.

ACADEMIC COMPETENCE – THE BASELINE IN SELECTION

Given the multitude of student characteristics that might reasonably be studied, it is important to choose an appropriate starting point or orientation that simplifies the problem or at least makes it manageable. Our orientation is to study the role of personal qualities as a supplement to academic competence in making admissions decisions; that is, to what extent do various personal qualities influence admissions decisions above and beyond the academic competence of the applicant?

There are several good reasons for treating academic competence as the baseline in the analyses of selection. First, it is a recognized common practice in admissions to give special emphasis to academic competence, especially as evidenced by prior school performance and admissions test scores. Second, from an educational standpoint, personal qualities of applicants are usually viewed as possibly relevant, *assuming* the student is qualified academically as well.

Finally, there is, in fact, a substantial relationship between academic competence and selection decisions. Therefore, investigating whether or not various personal qualities influence selection over and above academic competence is an effective research strategy; otherwise many of the "influential factors" might simply be reflections of academic strength or weakness.

Figure 6.2 illustrates several aspects of the relationship between academic competence and selection at one institution. For the purposes of this illustration, academic competence is represented as an equally weighted composite of high school rank (HSR) and test score (SAT). The figure includes a histogram showing the proportion of all applicants to this college who score at different levels of this composite (which has a mean of 50 and a standard deviation of 10 for the applicants to all nine colleges).

The dotted curve is a logistic function showing the probability of acceptance (P_a) at each score level of the academic composite. Thus, at this institution a student with an academic composite of 50 (point A)

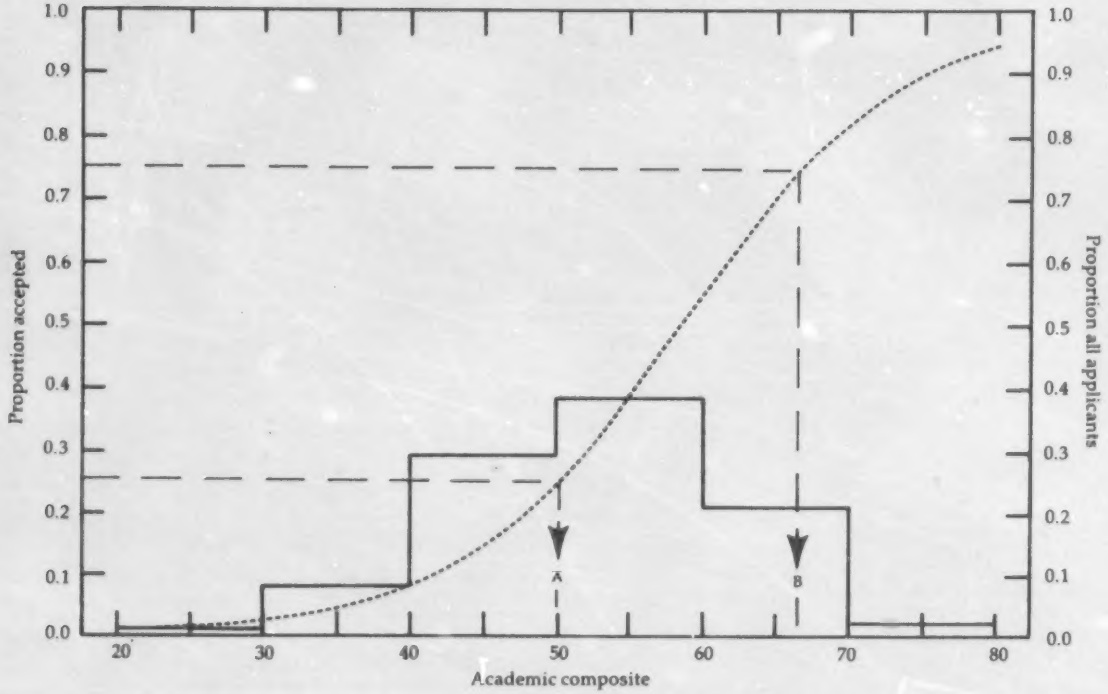

Figure 6.2 Number of applicants in different ranges of an academic composite based on school rank and test score (equally weighted) and a logistic function showing proportion accepted in each range (illustration based on Colgate).

has a .25 probability of being accepted. Similarly, a student at point B has a .75 probability of being accepted. Thus, for any group of students one can determine the proportion likely to be accepted on the basis of where the individuals fall on the curve. For predicting this two-category criterion (accept versus reject), the logistic function is superior to the usual linear regression model because the logistic function curves to fit the data and stays within the 0 to 1.0 range. (See technical note 4.)

Figure 6.3 shows the logistic function for each of the nine institutions. Several facts are immediately apparent from these curves. Where the curve is steepest, an applicant has about a fifty-fifty chance of being accepted. This point varies considerably from college to college (i.e., at an academic composite of 26 for Ohio Wesleyan and 74 for Williams). The function has a generally similar shape for most of the institutions; Williams is the notable departure. Finally, these curves indicate a moderately strong relationship between the academic composite and likelihood of acceptance, but it is by no means perfect. Were it a perfect relationship or were there a cutoff below which applicants are not admitted, the curve would drop vertically to the abscissa, that is, zero. (See technical note 5.)

How good is the prediction of admissions decisions? We first address that question with respect to the main measures normally used in evaluating candidates.

PREDICTING SELECTION DECISIONS

How much weight is applied to school rank and test scores in selection? Table 6.1 summarizes the results of a linear regression analysis in each institution. The average weights for HSR (.015) and SAT (.017) indicate that these institutions gave essentially equal emphasis to the two measures. (See technical note 6.) The two measures together yield an average point-biserial multiple R of .50. As indicated, this corresponds to a biserial R of .72. For technical reasons the biserial R's probably provide a more accurate impression of the predictability of admissions decisions from college to college. (See technical note 7.)

It is evident that the pattern of selection decisions at these institutions is not wholly accounted for by these two academic measures. Could we substantially improve predictions of who will be admitted if we include a number of additional variables such as personal achievement measures and background characteristics? As Table 6.1 indicates, the addition of 20 such measures improved the prediction of selection decisions (r_{bis}) from .72 to .85 on the average. Thus, to a considerable degree, selection decisions can be accounted for by the information in the applicants' folders.

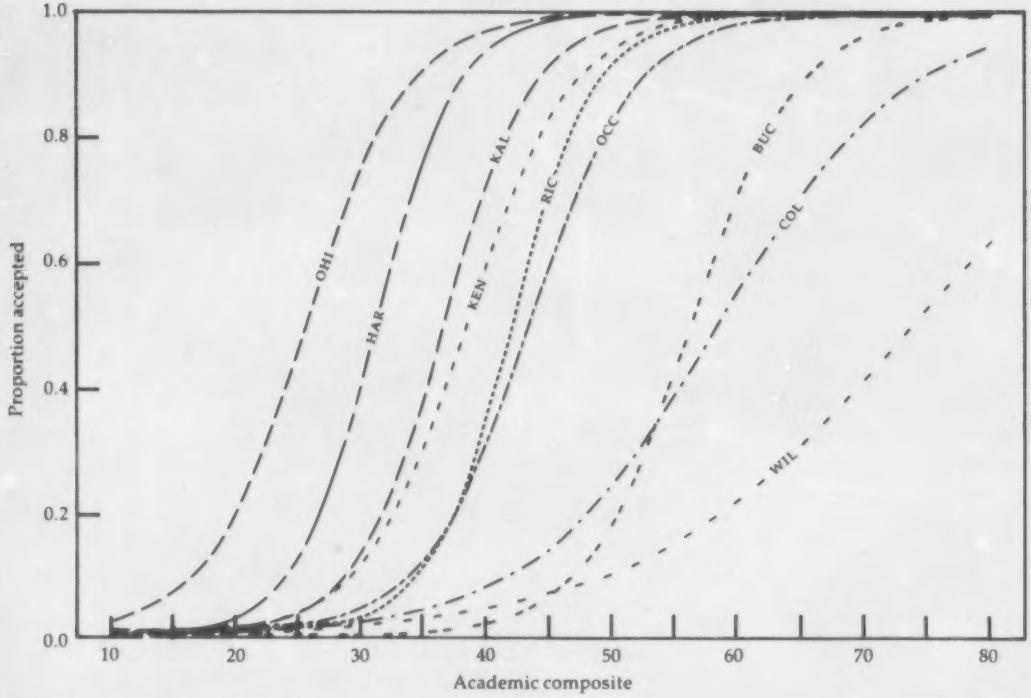

Figure 6.3 Number of applicants in different ranges of an academic composite based on school rank and test score (equally weighted) and a logistic function showing proportion accepted in each range (by college).

Two other measures that commonly play important roles in selection are overall academic and personal ratings by admissions staff. As shown in the first two columns of Table 6.1, these colleges place more emphasis on academic than on personal factors – about 75 percent to 25 percent, judged on the basis of these weights. Prior to analysis of these data, the colleges were asked about their policy regarding the intended weight on academic and personal ratings. The most typical answer was a .75/.25 ratio, although several answered .70/.30 or .60/.40. The relative weight did vary from college to college. For example, the personal rating (PR) had a weight of zero at Richmond but was somewhat more heavily weighted than the academic rating (AR) at Williams. Together the ratings predicted admissions decisions with about the same accuracy as did HSR and SAT.

One might speculate that applicants who are flagged by the admissions staff as having some quality arguing for admission would be more likely to be accepted and that, therefore, the flag variables (numbers 54, 62, and 66 on page 60) would add to the accuracy of predicting decisions. The overall ratings evidently already include whatever considerations are represented by the flags, since adding the flags raises the multiple R_{pb} only .02. On the other hand, adding the two overall ratings by admissions staff to the two independent academic measures, HSR and SAT, does yield more accurate estimates of who is likely to be admitted in some of the colleges.

It is important to note that the academic and personal ratings and the qualities flagged by the admissions staff do not represent a consensus of that staff. They are, rather, based on one folder reading by one staff member. It is entirely likely that consensus ratings would prove more valid and reliable in several respects. That possibility will be examined in later work of the project.

Of these various analyses, the one that most suggests further exploration is the increase from .72 to .85 in the prediction of action by adding a variety of achievement and background measures to HSR and SAT. This increment may even underestimate the role of those additional 20 measures, because linear regression is probably not the most effective or accurate method of examining the role of some qualities in selection. For this purpose we have used a method of *residual analysis*.

RESIDUAL ANALYSIS – THE ROLE OF SPECIAL CONSIDERATIONS

In addition to the statistical problem of predicting a measure that has values of only zero to one (reject or admit), there are several other reasons why linear regression is not well suited to understanding how per-

Table 6.1 Summary of the Influence of Key Variables on the Admissions Decision (Prediction of Action)

College	*Raw Score Weights*		*Multiple R* (AR + PR)		*Raw Score Weights*		*Multiple R* (HSR + SAT)		r_{bis} (HSR + SAT + *20 Variables*)
	Academic Rating	*Personal Rating*	r_{pb}	r_{bis}	HSR	SAT	r_{pb}	r_{bis}	
RIC	.32	.00	.54	.68	.022	.034	.66	.83	.90
HAR	.25	.07	.61	.91	.017	.017	.59	.88	.92
KEN	.19	.08	.64	.91	.018	.014	.54	.77	.84
OCC	.22	.04	.63	.85	.021	.015	.63	.87	.94
OHI	.07	.03	.32	.61	.005	.009	.34	.65	.87
WIL	.14	.16	.51	.71	.008	.010	.27	.38	.66
COL	.30	.12	.59	.76	.011	.027	.49	.63	.76
BUC	.31	.09	.53	.67	.025	.022	.55	.70	.80
KAL	.12	.03	.40	.70	.008	.009	.46	.81	.95
Average	.21	.07	.53	.76	.015	.017	.50	.72	.85

sonal qualities relate to selection. Sometimes a quality is shared by only a relatively small group (e.g., applicants having an alumni parent). Or perhaps the characteristic does not work like a continuous variable (e.g., distance from home to college; both local students and those living far away may get some preference for quite different reasons). Another quality may be important only under certain circumstances (e.g., if academic credentials are borderline).

Furthermore, it is helpful, if possible, to examine the role of particular qualities in a way that is both statistically sound and readily interpreted from the standpoint of admissions policy and practice. Stated more pointedly, the question is not whether or not a particular partial regression coefficient is statistically significant, but rather whether or not children of alumni are more likely to be admitted than their academic credentials would indicate, and, if so, by how much?

Residual analysis is intended to answer just that question; that is, to evaluate the role of special considerations in selection, be the effect positive or negative. The method works as follows: a group is identified for evaluation (e.g., applicants who live within commuting distance). Considering the school rank and test score of each individual in the group, an estimate is made (using logistic regression) of the likelihood that each individual will be accepted. Summing these estimates gives an expected proportion of the group that would be accepted purely on the basis of the academic measures. This figure is compared with the proportion of the group that was actually accepted; the result is a *residual selection rate*. For example, if one would expect to admit 46 percent of a group on the basis of academic credentials while 54 percent actually were admitted, the residual selection rate would be +8. Such are the entries in Tables 6.2 through 6.5. The residual selection rates shown in these tables are the actual percent of each group that was selected minus the percent that would be selected on the basis of high school rank and test score alone. An asterisk (*) indicates that the residual rate was significantly different from zero ($p = .05$).

These residual selection rates indicate the extent of advantage or disadvantage that groups with various characteristics might have in selection (assuming comparable HSR and SAT), but to guage the numeric effect a characteristic has on the overall selection process at a given college, it is necessary to take account of the percentage of applicants with that characteristic. That number varies considerably and is sometimes quite small. For example, the percentages of all applicants who had an interview that was rated outstanding was as follows: Bucknell-8, Colgate-2, Hartwick-4, Kalamazoo-6, Kenyon-5, Occidental-4, Ohio Wesleyan-1, Richmond-1, Williams-14. Table 5.1 shows what propor-

tion of applicants in different colleges have various characteristics or evidence of high personal achievement. For some variables the analyses were based on samples of 500 applicants as indicated in the list on pages 58–61. Results are not reported (–) in any case where the relevant group was too small for analysis (less than 20).

One general observation about these results is that the background characteristics in Table 6.3 appear to have greater residual influence in selection at these colleges than do the achievement measures in Table 6.2. Being a valedictorian makes a noticeable difference if one is applying to one of the more selective colleges (Bucknell, Colgate, Williams) as do academic honors to a lesser degree. The remaining measures in Table 6.2 represent personal achievement; higher standing in these areas typically has limited influence it seems. There is evidence of a fairly systematic positive effect of a good personal statement or a good reference from the secondary school.

In Table 6.3, minority status has, in most colleges, a large positive effect on selection. Due to small sample sizes, results for different ethnic groups cannot be determined reliably college by college, but an overall estimate across colleges indicates that the residual was substantial and positive for both black (.33) and Hispanic (.23) applicants. For the most part that effect does not extend to disadvantaged students as here defined.

At the three more selective institutions, affiliation with the institution is clearly a plus in gaining admission. For example, local residents and alumni children enjoy a substantial residual advantage. Other affiliative variables show a positive, though small, effect; for example, coming from a close-tie feeder school, having a sibling enrolled or recently graduated.

One possible reason that background characteristics are more often associated with positive residual selection effects is the nature of the measure themselves. Background characteristics (sex, alumni tie, and so forth) are quite clear, reliable, and easy to see in the record. Measures of achievement or narrative reports are more difficult to assess. Even though the research staff ratings were carefully conducted with specific standards for each, those ratings were not available and visible in the candidate's folder when admissions decisions were made. Thus, the mere fact that some measures or characteristics are easy to focus on may account in part for how much weight they receive in admissions.

In examining the patterns of individual selection weights in Tables 6.2 and 6.3, it is important to remember that the effects shown are not independent. For example, applicants with outstanding school references have a significant positive residual selection rate in several

Table 6.2 Residual Selection Rates for Groups of Applicants Showing High Achievement (by College)

High Achievement	*Residual Selection Rates at Each College*									*Overall Residual Rate*
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL	
Valedictorian	−2	–	−3	−1	–	21*	17*	10*	0	7
Academic honors	–	–	−1	−2	–	7	12	9	0	4
Community activities	−6	–	10	−3	−9*	5	4	−7	2	0
Athletic achievement	2	1	1	1	1	5	1	4	−1	2
Leadership	−2	−2	1	0	5	3	10*	7	1	3
Creative talent	0	3	1	0	−1	5	4	2	1	2
Follow-through	−10*	4	6	3	1	6	5	3	1	4
Work extent	−6	8*	2	−2	3	2	−8	4	3	1
Work level	1	−1	7	−1	−1	−3	−7	4	5	1
Statement – writing	–	–	2	–	–	17*	7	9	–	8
Statement – content	–	8	3	8	6	11	12	2	–	7
School report	3	2	7	9*	2	3	12*	5	2	6
Teacher reference	–	−2	–	−2	–	9*	10*	2	–	6

* $p = .05$.

colleges; the same is true of students who have won academic honors. It may be that in both cases the positive residual is due mainly to the academic recognition, and the reference itself may have little independent effect on selection decisions. Additional analyses were undertaken to examine the independent effects of major types of measures on selection decisions, and generally, the results were similar to those shown in Tables 6.2 and 6.3 (See technical note 8 and Appendix Table D.3).

One background effect that did *not* show up in Table 6.3 is noteworthy. It is often assumed that selective private colleges are bastions of privilege, catering to the rich and influential. No doubt these colleges welcome applications from students who can readily afford the tuition as well as meet admissions standards, but there is no evidence in these data that students from affluent families receive any preference in selection.

An outstanding interview is strongly associated with increased probability of acceptance. This is an interesting measure that warrants further study. It seems doubtful that the observed effect results only from "making a great impression." Typically, interview protocols were rated by another admissions officer reading the folder at a later date. It may be that interview ratings were confounded with admissions decisions, but did not actually have an independent causal effect. Even if the interview ratings were made independently, positive ratings may have resulted in part from certain knowledge that the applicant had an unusual quality that would make a strong case for admission.

Other data argue against that latter interpretation. Comparison of the profiles of interviewees rated outstanding, as opposed to the normative "good," reveals few important differences in objective measures of achievement and background. Aside from having very good scores and academic records (which the residual takes into account), those rated "outstanding" differ mainly in receiving very high personal ratings and flags such as "unusually mature;" that is, subjective evaluations that raise the same questions as the interview rating. Thus, it does not appear that the higher rate of selection in some colleges for students with outstanding interviews is due simply to the fact that such students have something unusual going for them. An additional regression analysis confirmed that conclusion, plus the fact that coming for an interview was not, in itself, any advantage to an applicant (See technical note 9). It will be interesting to see how these students who made a favorable impression in a face-to-face situation succeed in later years.

Table 6.4 gives some evidence that the applicant's intended major may influence the admissions decision, although the effect seems largely

Table 6.3 Residual Selection Rates for Groups of Applicants with Various Characteristics (by College)

Characteristic	*Residual Selection Rates at Each College*									*Overall Residual Rate*
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL	
Aid applicant	1	3*	1	−1	−2*	3*	−2*	2	−1	1
Came for interview	−3*	4*	7*	−3*	2*	2*	5*	8*		3
Outstanding interview	11*	2	9*	9*	7*	23*	17*	30*	2	21
Sent work sample	−1	7*	2	2	0	5	1	6*	−1	3
Age: 18+	1	3	−1	3	1	4*	1	7*	−1	2
Women	−15*	1	2	−2	1*	0	0	−1	1	−2
Minority	26*	–	12	11*	−3	53*	46*	51*	1	31
Disadvantaged	–	−1	2	1	−7*	18*	6	−1	2	1
Diversity state	–	–	−1	1	3	–	10*	10*	0	4
Local resident	5*	2	−1	−1	−2	26*	9*	26*	−1	3
Close-tie school	5*	1	5*	−3	3*	13*	0	7*	0	4
Parent:										
Prominent	−2	−2	−1	−3	0	3	−3	−2	1	−1
Highly educated	−6	−5	−1	−4	−1	2	0	0	2	−1
From selective college	2	0	2	−4	3	−1	2	2	0	1
Alumni	9*	–	6	−1	3	36*	31*	47*	−1	23
Sibling alumni	3	–	−1	–	7	–	7	7	1	4

* $p = .05$

Table 6.4 Residual Selection Rates for Groups of Applicants Expressing Interest in Different Types of Degree Programs (by College)

	Residual Selection Rates at Each College								
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL
Arts and humanities	−2	1	−3	1	4	3	4	9*	3
Biological science	−4	−4	1	−4	−4	1	7	3	5
Business	1	0	−4	−7	−2	–	13*	−10*	−9*
Physical science	1	4	3	−1	−3	−9	−5	0	0
Professional	7	−7*	−3	−5	−6*	4	−10	−28*	0
Social science	−4	−1	3	−5	0	−3	0	−4	2
Undecided	3	3	5	−2	4	4	−10*	7	−3

* $p = .05$.

Table 6.5 Residual Selection Rates for Groups of Applicants Flagged by Admissions Staff for Qualities that Recommend Admission (by College)

Quality Flagged	*Residual Selection Rates at Each College*								
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL
Outstanding talents and accomplishments									
Music, art, literary	−4	2	4	0	−1	11*	5*	19*	2*
Leadership, entrepreneurial	5	8*	8*	0	2	13*	7*	18*	2
Science and technology	–	–	–	–	–	9	10	21*	1
Athletic	5*	3	4	1	3	13*	12*	15*	−3*
Other	−7	–	8	–	–	9	10*	18*	–
Unusual personal attributes									
Mature and well-directed	−2	5*	5*	–	1	30*	14*	23*	2
Overcame hardships	−7	−2	12	10*	2	14*	9*	21*	8
Significant work experience	−9	4	8	–	−2	11*	−12*	–	4
Outstanding references	−4	9*	9*	3	5*	20*	14*	31*	1
Strong intellectual orientation	0	2	2	–	–	30*	18*	10*	0
Rich experiences	−5*	4	7*	−7	2	5*	2	12*	2
Cultural background	11*	9	13*	–	−1	34*	29*	35*	4
College interests									
Important school community	6	0	6	2	3*	12*	0	11*	2
Strengthens a tie	11*	1	13*	2	4*	33*	30*	45*	4
Fits enrollment need	–	6	–	–	−2	16	–	17*	–

* $p = .05$.

centered in two institutions (Colgate and Bucknell). The only degree interest that seems to have a fairly consistent (negative) effect is the professional area.

Table 6.5 shows the results of a similar residual analysis for those groups of applicants who were flagged by the admissions staffs for the

various reasons indicated. This analysis tends to confirm other results already reported. The flags seem to have a bearing on selection decisions only in some colleges. Where they do, the effects seem consistent with the previous finding of positive residual effects for minority status (here, cultural background), affiliation with the college (here, strengthens a tie), preference for certain degree objectives (here, fits enrollment need), and school and teacher reports (here, outstanding references). The fact that these residuals were generally larger than those previously reported seems reasonably attributed to a confounding, to some extent, of admissions-staff ratings with selection decisions.

SELECTION ZONES AND THE DYNAMICS OF ADMISSIONS POLICY

An important weakness in much research and writing about the selection process is the common implicit assumption that selectivity is basically similar wherever it is found and however it is defined. Table 6.6 shows four different views of selectivity represented by Columns I through IV.

Table 6.6 Four Views of Selectivity at Nine Colleges

College	I. Percentage of Applicants Accepted	Academic Composite: II. Freshman Average	Academic Composite: III. Score where Probability of Admit is .50	IV. Proportion of Applicants in Selection Zones[a]
				Low — Uncertain — High
OHI	93%	42	26	
KAL	91	54	37	
HAR	83	44	32	
KEN	80	50	39	
OCC	77	55	44	
RIC	55	48	42	
BUC	39	56	57	
COL	35	56	59	
WIL	22	62	74	

a. Selection zones were defined as those score ranges on the academic composite where probability of admission was less than .25 (low), .25 to .75 (uncertain), and greater than .75 (high).

Two of these measures are familiar. The percent accepted (I) is a common index of selectivity; the average academic composite of enrolled freshmen (II) is basically similar to the closely watched "SAT average for this year's group." The other two measures of selectivity in Table 6.6 provide a different perspective.

Column III gives the score on the academic composite where the probability of being admitted is fifty-fifty, that is, where the decision action is at a particular college. As the figures show, the nine schools vary by almost five standard deviations on this index, a dramatic difference considering that in all of these colleges the average applicant had test scores well above the national average of all SAT takers.

Column IV of Table 6.6 shows a fourth view of selectivity: the proportion of the applicant group at each institution that was in each of three zones: a low zone, where most applicants are rejected; an uncertain zone, where acceptance is a fifty-fifty proposition on the average; and a high zone, where most applicants are likely to be accepted. The institutional policy issues, as well as the practical problems of selection, are notably different in these three zones. The fact that these colleges have quite different proportions of their applicants in these three zones simply reflects the well-known fact that the character of the admissions process varies in important respects from college to college. For example, if most of a college's applicants are in the high zone, most will be admitted, and the admission staff likely spends much more of its time recruiting students than deciding which ones to admit.

This last view of selectivity suggests that it might be useful to examine how personal qualities influence admissions decisions in different selection zones, where institutional objectives and the dynamics of the decision process may be quite different.

Residual analysis is particularly well suited for this type of evaluation. Using the same methods as previously described, residual selection rates were computed within selection zones and pooled across institutions. The results are shown in Table 6.7.

The achievement measures have a residual effect mainly in the uncertain zone. It appears that evidence of special accomplishments plays little part when the academic credentials are unquestionably good or when the applicant is clearly not qualified. But in the uncertain middle, the colleges evidently look to school references, the personal statement, and sometimes extracurricular activities as a basis for deciding who to admit among otherwise similarly qualified candidates.

A striking aspect of Table 6.2 described earlier was the extent to which the data appeared inconsistent with the common assumption that selective colleges give preference to applicants who have achieved

Table 6.7 Residual Selection Rates for Various Groups of Applicants (Within Each Selection Zone, Pooled Across Colleges)

Characteristic	*Residual Selection Rate*[a]			
	Low Selection Zone	*Uncertain Selection Zone*	*High Selection Zone*	*Overall Residual Rate*
Admissions				
Aid applicant	4	−5	2	1
Interviewed	5	4	0	3
Sent work sample	8	−1	2	3
High achievement				
Valedictorian	12	22	4	7
Academic honors	−3	13	1	4
Community activities	−6	2	0	0
Athletic achievement	1	4	1	2
Leadership	0	7	1	3
Creative talent	0	10	0	2
Follow-through	−1	7	0	4
Work extent	0	1	1	1
Work level	1	3	1	1
Statement—writing	5	17	5	8
Statement—content	3	14	4	7
School report	1	14	2	6
Teacher reference	8	5	0	6
Background				
Age: 18+	6	0	1	2
Women	1	−8	0	−2
Minority	45	30	5	31
Disadvantaged	7	0	−1	1
Diversity state	7	7	0	4
Local resident	13	6	1	3
Close-tie school	8	1	3	4
Parent:				
Prominent	4	0	0	−1
Highly educated	1	2	−1	−1
From selective college	2	2	1	1
Alumni	34	32	5	23
Sibling alumni	2	14	0	4
Rating				
Outstanding interview	28	28	7	21

a. Entries are actual percentage of group accepted minus percentage that would be selected on the basis of HSR and SAT. The three selection zones are defined as score ranges on the academic composite where probability of acceptance (P_a) is ≤ .25 (low), .26 to .74 (uncertain), and ≥ .75 (high).

recognition for unusual extracurricular accomplishment in secondary school. Overall, the residuals for community activities, leadership, athletic achievement, and creative talents were barely positive. In discussing these results, several admissions officers suggested that such preference may be limited to the zone where admission is uncertain and may operate when the achievement is truly outstanding or when there is little evidence of any accomplishment (the so-called flat record).

All of these hypotheses are to some extent correct. Table 6.7 shows that accomplishments, particularly creative talents, do get more attention in the uncertain zone. More detailed analyses within that zone revealed that 99 students who received a rating of 5 on any of the four school activities had a +.12 selection residual, while 188 with a low rating (1 or 2) on follow-through had a −.11 residual. Thus it is true that the really outstanding accomplishment and the flat record do seem to have special influence when admission is uncertain, although such students constitute only about 1 percent of the applicant group! Neither one of these unusual extracurricular records had a noticeable effect on selection outside the uncertain zone.

While special achievement is evidently not enough to gain admission for individuals in the low zone, some background characteristics have a strong residual effect in both the middle and low zones. It appears that minorities and alumni children in the high zone gain admission on their academic merits, but such students in the lower selectivity zones receive marked preference because of their particular background. Having a brother or sister in the college seems to be an advantage if the applicant is in the uncertain zone, but is no help if the applicant's credentials are clearly low.

Several variables seem to offer occasional advantage to students in the low zone, but not much in other zones: being disadvantaged, being older, sending a sample of work, coming from the local community. Students who would not ordinarily be considered qualified may thus gain attention and acceptance.

Background characteristics appear to serve as a basis for preference in the low and uncertain selection zones. The personal achievement measures, on the other hand, seem more likely to serve as midzone tie breakers, particularly in the latter stages of the admissions cycle, when colleges are deciding which students to admit from a group of more or less equally qualified applicants. Certainly there are exceptions. For example, athletic stars on coaches' recruiting lists probably get special treatment at many colleges regardless of the selection zone they may be in. This is a relatively small group, however, and does not much affect the limited influence of athletic achievement on selection decisions.

These results strongly support the assumptions that provoked this analysis. Depending on the selection zone an applicant falls in, a given personal quality may be irrelevant, a tie breaker that determines which student is chosen, or a signal that identifies students clearly preferred because of institutional policy. As a result, the residual effect is substantially greater in the relevant zone than it is overall. (See technical note 10.)

This method of analyzing the selection process is useful because it recognizes that the selection decision may differ depending on the individual case. There remains the question of how these results compare with institutional policy, that is, how reliably policy is translated into practice.

Early in this study, admissions officers in the participating colleges were asked to indicate how much weight their institutional policy placed on various selection factors. The ratings from 0 (no weight) to 3 (substantial weight) are shown in Table 6.8 along with corresponding residual selection rates. Average residual rates were used, as necessary, in characterizing actual weights for the achievement measures.

In achievement measures, two discrepancies can be noted between the intended and actual weights. First, the residual selection rates were low despite a general intention to place moderate weight on these measures. Second, there is little, if any, correspondence between the level of intended and actual weights, item to item and college to college. In background characteristics, there is a clear relationship between the intended and actual weights, but the connection works in only one direction. Where there is heavy actual weight, the intended weight is also heavy; but where the intended weight is heavy, it does not necessarily follow that the college actually gives that preference in admissions.

Two possible explanations for this pattern come to mind. Colleges may be under the impression that they give more preference to personal achievement than they do, because in the normal course of selecting academically able applicants, many students with unusual personal accomplishments are selected as well. Another consideration is the difficulty in assessing achievement reliably. Noting and giving some extra credit to a minority student or an alumni child is relatively simple compared with deciding which students have accomplished something meritorious in high school. Not only do these colleges base preferential admissions less on unusual accomplishments than on background characteristics, but it also appears that their actual selection decisions do not fully match their policy intentions with regard to such achieving students.

The various findings and conclusions reported in this chapter all

Table 6.8 Comparison of Institutional Policy Intention and Actual Weight in Selection Decisions

Personal Quality	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL
	Intended Weight by Admissions Policy[a]								
Achievement									
Extracurricular activities	1	2	1	2	2	2	3	2	2
School references	1	3	2	2	2	3	2	2	2
Personal statement	1	1	2	2	2	2	1	2	3
Background									
Women	3	2	2	1	1	0	0	0	0
Minorities	3	1	3	3	2	3	3	3	3
Alumni children	2	2	2	2	3	3	3	3	1
Local resident	1	2	2	1	3	3	1	2	1
Close-tie school	2	2	2	3	1	2	1	2	1
Diversity state	2	1	1	3	1	2	1	1	2
	Actual Weight (Residual Selection Rates)								
Achievement									
Extracurricular activities	−2	1	3	−1	−1	5	5	2	1
School references	3	0	7	4	2	6	11	4	2
Personal statement	–	8	3	8	6	14	10	6	–
Background									
Women	−15	1	2	−2	1	0	0	−1	1
Minorities	26	–	12	11	−3	53	46	51	1
Alumni children	9	–	6	−1	3	36	31	47	−1
Local resident	5	2	−1	−1	−2	26	9	26	−1
Close-tie school	5	1	5	−3	3	13	0	7	0
Diversity state	–	–	−1	1	3	–	10	10	0

a. Institutions stated policy as follows: 3—substantial weight in selection, 2—moderate weight, 1—some weight, 0—no weight.

concern the effects of institutional admissions decisions. That selection process is important, but it is evident that many colleges are limited in how much they can actually affect their entering class through manipulating selection policy, since the majority of applicants are accepted. Consequently, at many colleges, student decisions as to whether or not to apply or to accept an offer of admission may have more real effect on the student body than college selection practices. In the following chapter we examine this self-selection process.

7

Self-Selection—Personal Qualities in Application and Enrollment Decisions

Up to this point we have been concerned primarily with which students are selected by institutions. However, there is also the important factor of student self-selection. Students make decisions about whether or not to apply to a given institution, and if accepted, they make further decisions about whether or not to enroll. This chapter discusses two questions related to these student decisions. First, what qualities differentiate the applicants to each of the participating institutions from other higher institutions? Second, what qualities differentiate the students who do and do not enroll at each of the participating institutions?

Before presenting application and enrollment analyses for the nine participating colleges, it is of interest to review briefly the present context of student decision making. This context includes much-discussed demographic trends, marketing emphases, yield/enrollment analyses, and a limited amount of systematic research that goes beyond specific institutional data. A cogent analysis of the anticipated demographic trends was presented by Centra (1980). He used estimates and projections of the 18- to 21-year-old population in the United States made by the United States Bureau of the Census (1977), enrollment projections made by The National Center for Educational Statistics (Frankel and Harrison 1977), and other projections. It is clear that there is disagreement among these writers about what to expect for the future, but Centra observes that "the majority of forecasters take a moderate view of future growth" (page 23). Figure 7.1 depicts the demographics quite poignantly.

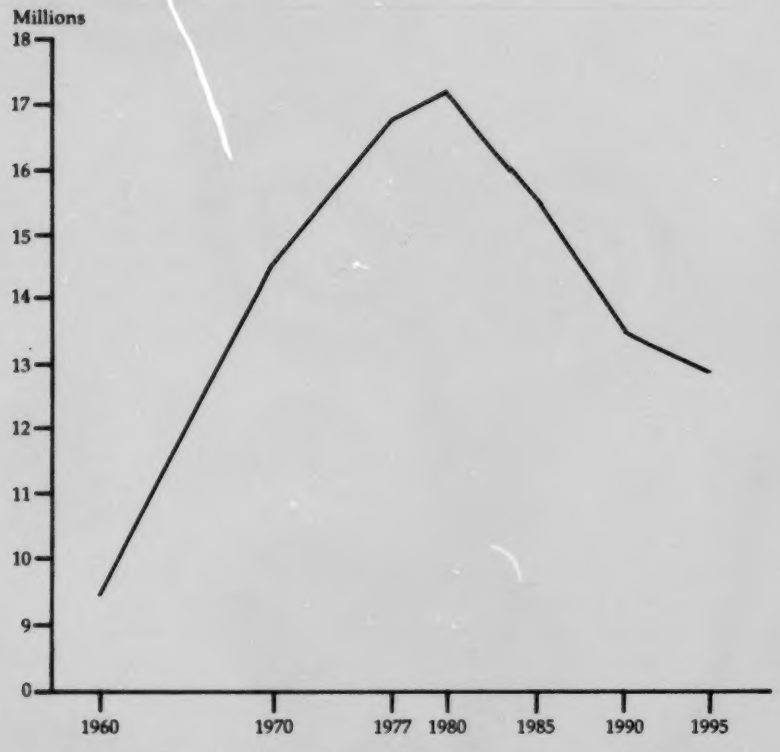

Figure 7.1 Estimates and projections of the 18- to 21-year-old population in the United States, 1960–1995.
Source: U.S. Bureau of the Census. *Projections of the Population of the United States,* No. 381, 1967; No. 470, 1971; No. 704, 1977. Current Population Reports, Series P-25 (adapted from Centra 1980).

The demographic trends vary, of course, for different subsets of the population – particularly for different sex and ethnic groups and for different regions of the country. Figure 7.2 shows recent trends for men, women, and minority registrants in the College Board's Admissions Testing Program. These figures confirm that women and minorities are two new, important clienteles. Regional projections (Magarrell 1980) indicate declines in public high school graduating classes between 1979 and 1995 of 45 percent in Connecticut, 42 percent in Massachusetts and New York, 37 percent in Pennsylvania, 32 percent in Michigan, 31 percent in Ohio, and 11 percent in California. Substantial gains in public high school enrollment are projected in only a few states: Utah (58

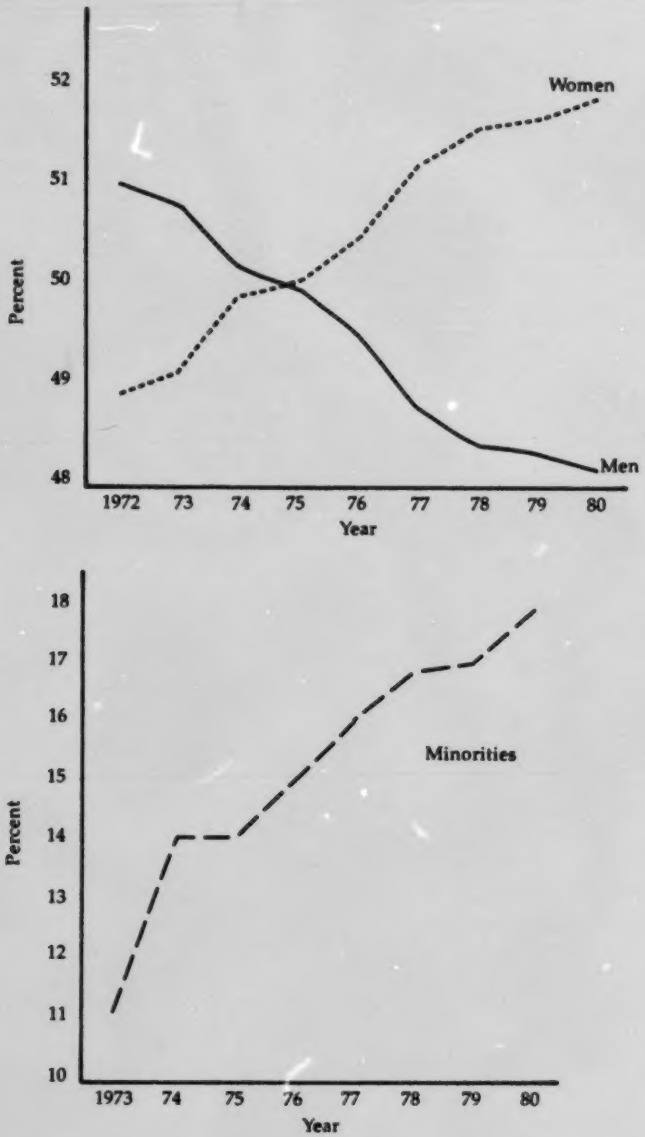

Figure 7.2 Representation of men, women, and minorities in College Board registration.
Source: College Board (1980*b*).

percent), Wyoming (49 percent), Idaho (28 percent), Nevada (17 percent), New Mexico (16 percent), and Texas (10 percent).

Because these demographic data have been well known in the education community for some time, new emphases have evolved in recent years in college admissions. Moll (1979) reports that these emphases include establishing a broader visibility for a college, more extensive alumni involvement, comprehensive programs of enrollment management, introduction of new academic programs, increased use of no-need (honor) scholarships, increased secondary school visitations, and expansions of mass mailings. Kotler (1976) argues for the use of market "positioning" by colleges, so that all do not attempt to appeal to the same students; however, the argot as well as the approaches of business marketing are foreign and distasteful to many admissions officers. Moreover, many colleges lack the resources to undertake sophisticated marketing analyses.

Some institutions, on the other hand, conduct extensive analysis and planning, as suggested by Ihlanfeldt's recent book (1980). To develop a marketing plan, Ihlanfeldt states that "a college needs to determine how and to what extent the experience it has to offer affects its students in a more beneficial manner than its main competition" (page 16). His principal thesis is that colleges need to collect systematically the kinds of data needed for market analysis. Most of the needed data, in his view, pass over the desks of admissions officers daily, but more often than not they are not retained and organized in a form readily useful in market analysis. Extensive research and planning will be needed, Ihlanfeldt asserts, to allow for the development of forecasting models by market area.

A recent colloquium of institutions and individuals (College Board 1980*a*) experienced with college marketing problems attempted to generalize beyond the experiences of single institutions. Major conclusions, in abbreviated form, include the following:

- Colleges must be responsive to more than the expressed desires of potential students.
- Marketing research can contribute greatly in developing an understanding of a reasonable scale for a college.
- The recruitment-admissions process must be developed as an integral part of a college's direct involvement in a student's educational development.
- Cooperation between institutions must be fostered both for its own benefits and as an antidote to excessive competition.
- Diversity must be encouraged through the definition of varieties of quality.

APPLICANT SELF-SELECTION

With this contextual background, we now turn to the subject of applicant self-selection for the institutions that participated in the survey. A useful starting point is to compare the students, in aggregate, with the aggregate of all public and private four-year colleges (Figure 7.3). With respect to academic abilities and parent income levels, the applicants to the nine institutions are above the average for all private and public four-year colleges. In college, they plan more activities in athletics, social clubs, journalism and debate, student government, and art and dramatics than does the average applicant to a four-year private or public college. There are fewer differences in their choices of study. Even though there is a slight preference for the social and biological sciences, there is less interest in the physical sciences, business, and the arts and humanities than is the norm for four-year colleges nationally.

Applicants by distance and region

Most of the applicants to some colleges live in close proximity or at least in the same region. But some colleges draw applicants from great distances. Other colleges have a regional character determined more by culture than distance. Table 7.1 presents a comparison of the nine participating institutions by distance and region. For the purposes of this study, distance was based on four categories: commuting distance less than 150 miles, 150 to 400 miles, and more than 400 miles. Thus, in Table 7.1, Ohio Wesleyan and Kenyon are seen to attract many applicants from a great distance—since the mean distance for an applicant's residence is 3.34 (on a scale from 1 to 4). In contrast, Kalamazoo has a mean distance of only 2.11, indicating that most applicants come from relatively close areas. But note the regional affiliations in Table 7.1 as well. With the exceptions of Richmond, Occidental, and Kalamazoo, the participating institutions attract more applicants from the Northeast than from any other region. Kalamazoo is the only Midwestern participant to attract most of its applicants from that area.

Basic differences in applicants

The most important differences among the applicants to the nine colleges were analyzed statistically by considering 32 different variables simultaneously. A procedure known as *discriminant function analysis* was used. It was possible to reduce these 32 measures to three functions that accounted for most of the variations among the nine institutions. These three functions are best characterized by the largest variable

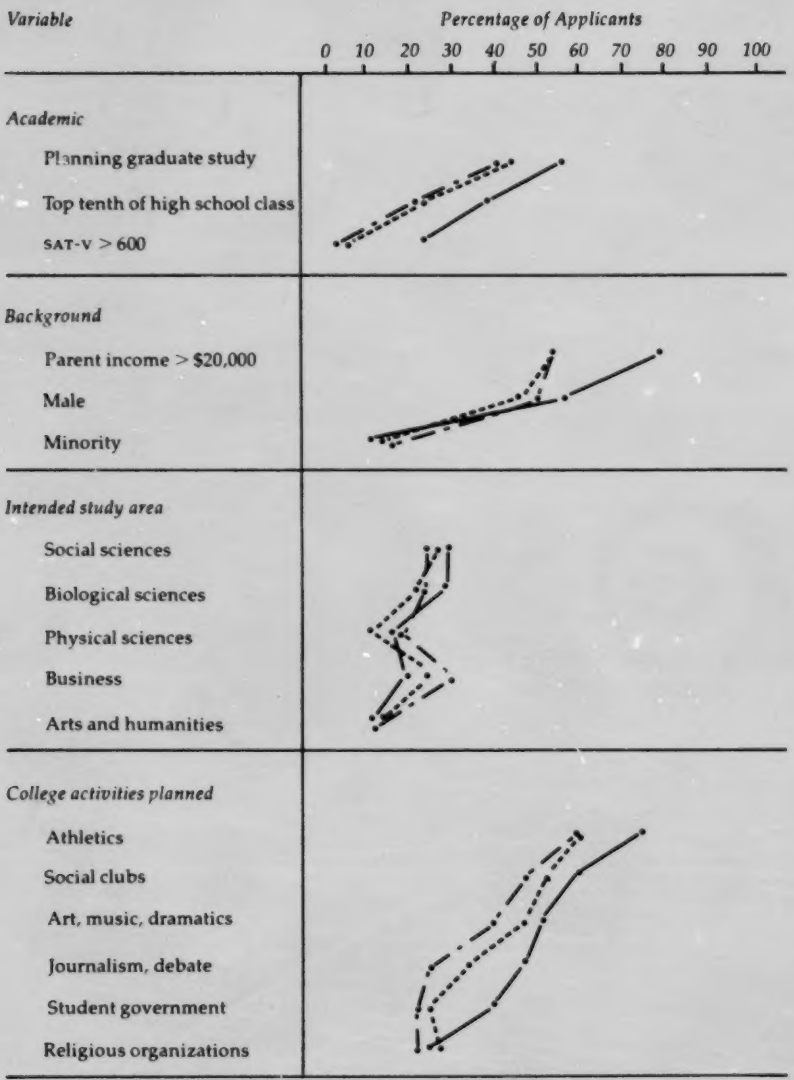

Figure 7.3 Comparison of applicants to participating institutions with applicants to four-year public and private colleges. See Appendix Table D.12 for further comparisons. Participating institution average (———). Four-year private college average (-------). Four-year public college average (· — ·). Note that minority percentage here is higher for participating institutions, as an average, than is indicated in other places in this report because the definition of minority differs.

Table 7.1 Applicants to Each College by Distance and Region

College	Distance[a]			Percentage by Region			
	Mean	More than 400	150–400	Northeast	Midwest	South	West
OHI	3.34	65%	10%	58%	31%	9%	1%
KEN	3.34	62	15	47	36	15	3
COL	3.04	20	66	86	6	6	2
WIL	2.93	30	34	72	9	11	8
BUC	2.86	10	67	85	4	10	1
HAR	2.76	6	70	95	2	3	1
RIC	2.73	28	26	44	3	53	1
OCC	2.44	32	18	8	7	5	80
KAL	2.11	12	6	6	90	3	1

a. The mean is based on a simple averaging of distance codes: 1—local area resident; 2—less than 150 miles, but not local; 3—150 to 400 miles; 4—more than 400 miles. The other columns are percentages of applicants.

loadings on each (correlations between the function and the variable) and by the percentage of variation explained:

Function	Percent Variation Explained	Institutional Variation		Principal Variables	Variable Loading
		High	Low		
1. Academic performance	43	WIL	HAR	SAT average	.57
				School rank	.44
2. Mobility	28	KEN	KAL	Distance	.79
				Came for interview	.36
3. Financial need	10	OCC	RIC	Aid applicant	.68
				Technical career	.32
				Minority	.30

The first discriminant function *(academic performance)* accounts for 43 percent of the variation in applicants and is represented primarily by SAT average and school rank. It distinguishes among applicants to the nine institutions better than does any other factor. The second most important distinguishing function has been labeled *mobility* because it loads primarily on distance and came for interview. Applicants scoring high on mobility applied to institutions some distance from their residence and visited that institution for a campus interview. The third function is *financial need.* Ihlanfeldt (1980) suggested that ability, mobility, and financial need were three especially important factors to consider in enrollment analysis. These results provide an empirical confirmation of his paradigm.

The institutional variations in these applicant dimensions are not surprising, but some reveal institutional characteristics not altogether obvious. Other analyses of this study have made it clear that applicants to these colleges vary in average academic ability. Mobility is a less obvious applicant characteristic; for example, Kenyon applicants are the most mobile of these nine applicant groups, on the average. The financial need dimension does not vary a great deal in the nine institutions, but Occidental has by far the greatest percentage of financial aid applicants and minorities in their applicant group.

Figure 7.4 presents a three-dimensional representation of these basic differences in applicants to the nine institutions. For ease of interpretation, percentages were used, and rather than the discriminant functions, we have plotted single variables representing those differences. The figure helps to illustrate the "distances" among the colleges when more than one characteristic is taken into account.

Other important applicant differences

Other important differences among applicants to the nine colleges can be ascertained from the order in which variables entered the discriminant analysis. Variables enter only if they discriminate significiantly after the influence of all previously entered variables has been removed. The first 15 variables to enter the analysis are given below in the order they entered (27 out of 34 variables added some significant discrimination). High and low colleges are indicated at the right.

Variable	*High*	*Low*
SAT average	WIL	HAR
Distance	OHI	KAL
High school rank	KAL	HAR
Aid applicant	OCC	RIC
Came for interview	WIL	KAL
Minority	OCC	HAR
Technical career	BUC	WIL
Statement—writing	COL	KAL
Athletic achievement	COL	OCC
Parent occupation	WIL	KAL
Professional career	WIL	HAR
Statement—content	WIL	KAL
Service career	HAR	BUC
Alumni parent	KEN	HAR
Follow-through	WIL	HAR

In interpreting such analyses it is important to remember that measures

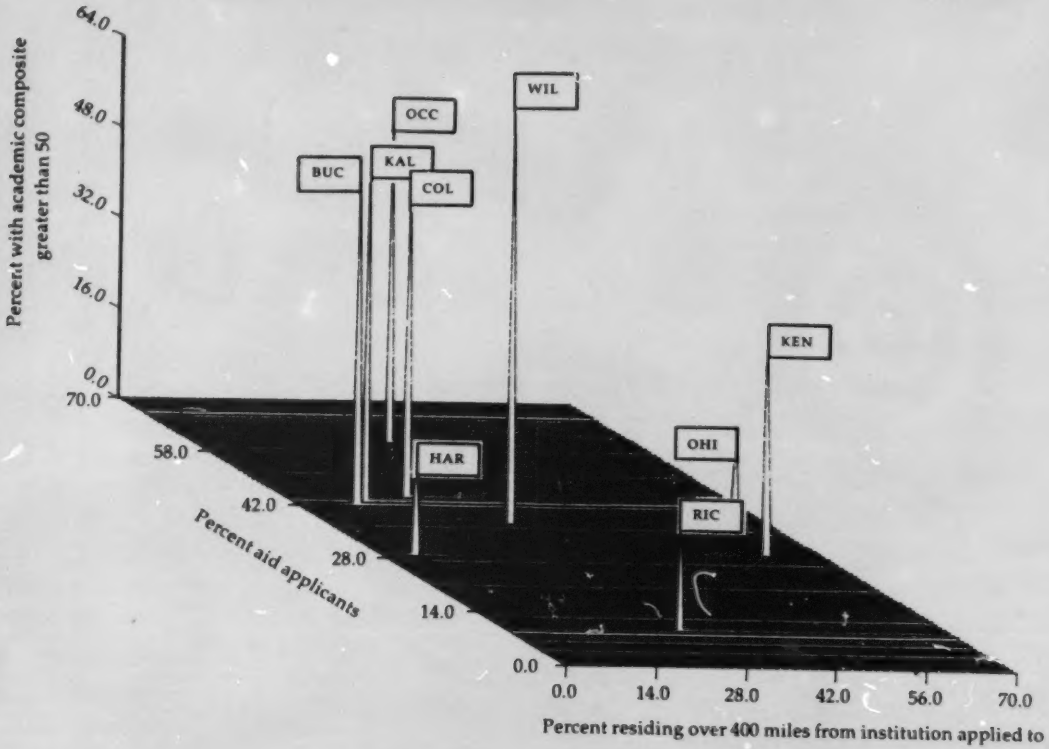

Figure 7.4 Applicant differences on three basic dimensions for the nine participating institutions.

overlap and colleges or students may score high or low on one measure largely because of their standing on another. See technical note 8 for discussion of this confoundment as it is related to analysis of selection decisions and predicting performance.

The following five variables did not make a significant discrimination independent of other variables and thus did not enter the analysis:

Work level
Alumni sibling
Public administration career
Scholarly career
Undecided.

Applicants' career orientations

A useful way to interpret the discrimination represented by the 15 most discriminating variables is to select two of interest and plot their averages for each of the nine institutions. An especially interesting contrast for these colleges is that between the career interests of applicants. Figure 7.5 plots two career choices as represented by mean responses for each college. Williams and Hartwick are at opposite extremes along the dimension associated with a professional career choice (mainly law and medicine). For technical career choices, Bucknell is at one extreme, and most of the other eight institutions are near the other extreme. Occidental is in an intermediate position on the technological dimension. Applicants to Williams have a very professional orientation, but it is a very nontechnological orientation. On the other hand, Hartwick applicants are neither professionally (as here defined) nor technologically oriented toward careers. Richmond, Kenyon, and Ohio Wesleyan cluster with an intermediate orientation toward professional careers and a nontechnological career orientation.

ENROLLMENT ISSUES

To many institutions enrollment decisions are as important as self-selection at the application stage. This is the traditional yield question: What percentage of those accepted actually enroll? Additionally, there are a number of related questions important to admissions and financial aid officers:

1. What characteristics distinguish those accepted students who enroll from those who do not?
2. Is an offer of financial aid important in an acceptee's decision to enroll?

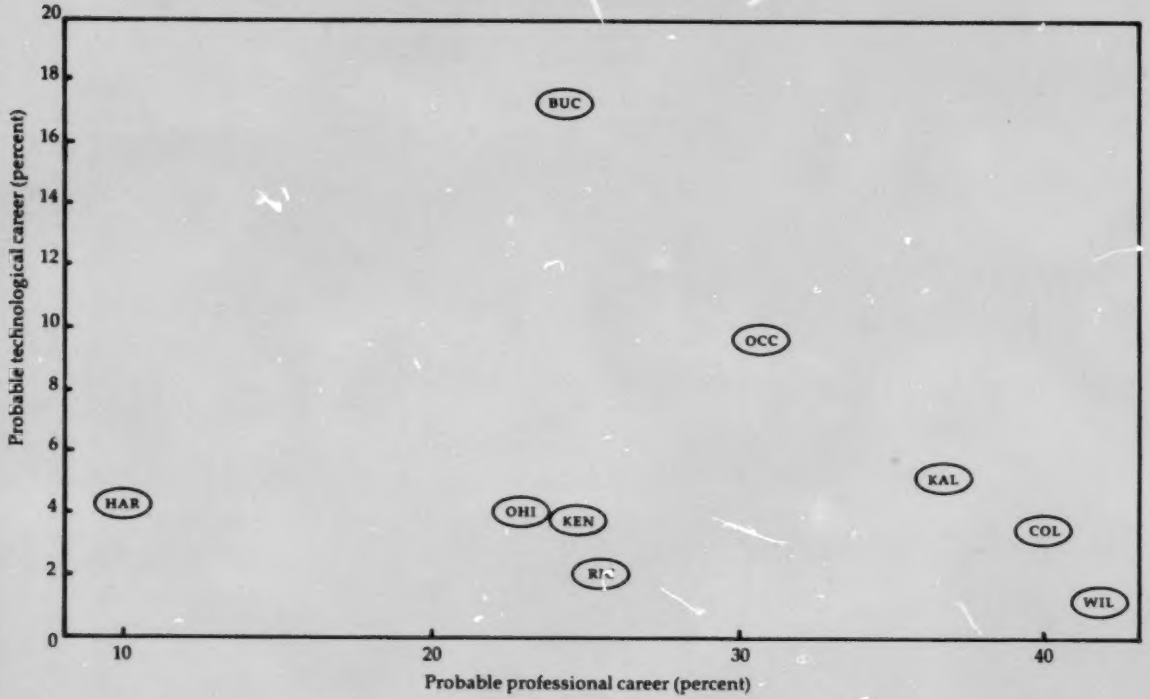

Figure 7.5 Comparison of applicants on professional and technological career probabilities.

3. Does contact with admissions staff through an interview relate to yield?
4. For what geographic areas and types of schools is yield the greatest?
5. Do particular groups of acceptees (e.g., women, minorities) have yield rates above or below the average?
6. How does our institution compare with other similar institutions in the above respects?

Predicting yield

In the previously described selection analyses, the principal predictors were well known: high school rank and test scores. Accordingly, in the residual analyses for selection, an initial prediction was made on the basis of HSR and SAT average. Then, variations around this basic prediction (residuals) were explored. Given acceptance, a similar analysis was conducted to predict enrollment. But in this case the basic predictors were not obvious, nor could they be expected to predict with the same degree of accuracy. Moreover, it was considered unlikely that as few as two predictors, as in the selection analyses, would be sufficient.

To isolate a limited set of variables useful in predicting yield, detailed cross tabulations of enrollment versus nonenrollment were conducted for each surveyed college for a large number of variables. Seven useful variables resulting from these preliminary analyses are presented in Table 7.2, which shows at the top (in parentheses) the overall yield rate for each institution and incremental rates (positive or negative) in percent around the overall percentage yield rate. These are called raw yield rates because no attempt has been made to control for confounding effects among the seven variables or with other variables. It could be, for example, that those interviewed at some institutions are the same persons who live a short distance from the campus. Thus, these variables could reflect essentially the same type of acceptee and, accordingly, cannot be interpreted as independent sources of variation in yield rates. Nevertheless, these preliminary analyses would indicate that both variables, as well as the others in Table 7.2, are important in enrollment.

Multivariate analyses of yield

To control for confounding factors and thus to allow for an unencumbered interpretation of important manipulable factors, multivariate analyses are necessary. For example, to consider the importance of an offer of financial aid as it relates to yield, it is essential to view it in-

Table 7.2 Raw Incremental Yield Rates for Seven Significant Applicant Characteristics

Variable/Characteristic	*Raw Incremental Yield Rate by College*[a]									
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAI	*Average*
(Overall yield rate, %)	(42)	(30)	(38)	(44)	(38)	(50)	(37)	(38)	(45)	
Came for interview	+12	+11	+8	+6	+9	+8	+13	+12	+12	+10
Aid offered	–	+24	+4	+4	+13	−1	+1	+3	+11	+5
High school rank:										
1st decile	−3	0	−6	−2	−4	−1	−5	−5	−2	−3
2nd decile	0	+4	+1	+3	−3	+4	+11	+1	+4	+3
3rd decile	0	−6	−4	+7	−2	−2	+15	+18	−2	+3
Below 3rd	+2	+1	+4	−1	+3	+9	+4	+14	+6	+4
SAT average:										
Over 600	−15	−5	−7	−6	−3	−2	−6	−11	0	−6
500–600	−2	−2	+2	+4	−5	+6	+9	+9	−2	+2
Below 500	+11	+3	+3	+3	+4	+3	+20	+24	+2	+9
Minority	−15	–	–	−1	−6	−11	−9	−6	−10	−8
Distance:										
Commuting	+8	+18	+12	+3	+13	–	+7	+22	+11	+9
Less than 150 miles	−2	+4	+6	−1	+3	+2	+6	+6	−2	+2
More than 150 miles	−2	−2	−2	−3	−1	−1	−1	−3	−6	−2
Alumni Parent	+7	–	+12	+14	+10	+28	+24	+26	+27	+18

a Dashes (–) indicate that the computation was not made because fewer than 20 cases were available for analysis.

dependently of academic ability. The preliminary analyses suggested five variables for the basic prediction of yield: the variables of Table 7.2 with the exception of aid offered and minority student (since it would be of interest to explore the effect of an offer of financial aid or of minority status with variations, due to the other five variables, removed). Following the development of a logistic prediction for each college based on these five variables, residual percentages were computed as before in the selection analyses.

Table 7.3 Residual Yield Rates for Groups of Acceptees with Various Characteristics

Characteristic[a]	*Residual Yield Rates at Each College*								
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL
(Overall yield rate, %)	(42)	(30)	(38)	(44)	(38)	(50)	(37)	(38)	(45)
Aid offered (.25)	–	23*	7*	5	14*	0	2	2	12*
Age: 18+ (.15)	−6*	−2	−2	4	1	8	−3	−2	1
Women (.54)	−5*	−3	−1	2	−2	1	2	−3	−1
Minority (.5)	−25*	–	–	−4	−9	−12*	−22*	−20*	3
High school									
Public (.70)	5	1	1	−1	3	2	5	4	−1
Private (.24)	−11*	−6	1	−22*	−4	9	−8	−19*	−12
Parochial (.6)	–	14	–	9	–	–	–	–	−11
Close-tie school (.23)	−2	−5*	−2	−4	−3	8	−4	0	−2
Class size									
Less than 50 (.10)	−9*	5	4	14	−9*	−2	−1	−14*	0
50–200 (.26)	−5*	−6*	−4	−4	−1	1	−1	−2	−1
200–500 (.42)	5*	1	1	−1	2	2	2	0	4
More than 500 (.21)	4	4	7*	3	0	−5	−1	−1	−6
Career plan									
Business or technical (.24)	3	−2	−1	4	−4	–	−2	10	−11
Professional or public (.46)	−7	−8	−6	−6	4	2	4	−4	3
Scholarly, art, or service (.30)	5	7	−2	0	0	–	0	−22*	−7
Personal statement orientation									
Career (.24)	−5	0	3	−7	−3	–	7	1	2
Intellectual (.18)	2	−2	2	6	−3	10	−20*	−17	−13*
Personal (.48)	3	−1	−3	−7	2	3	7	3	−2

a. For school type, career plan, and statement orientation, data are based on acceptees in a sample of 500 applicants to each institution. Other data are based on all accepted applicants. Results are not reported where the relevant group was fewer than 20. Entries are actual percent of acceptees enrolled minus percent predicted to enroll on the basis of high school rank, test score, distance, interview, and alumni parent. An estimate of the proportion of acceptees with each characteristic is given in parentheses.

* $p < .05$.

Table 7.3 shows residual yield rates for several important acceptee characteristics. Also given is an indication of whether or not the residual yield rate is statistically significant. Note that aid offered, minority status, high school (private), and class size (less than 50) have significant effects in three or more of the nine institutions. However, it is of interest that the effects are quite inconsistent across institutions, except in a few cases. In four of the nine institutions, acceptees who were offered aid tended to enroll at a higher rate than that predicted; in four other institutions, minority status had a negative association with enrollment. Richmond, Occidental, and Bucknell had significant negative yield rates for acceptees from private secondary schools. Acceptees from small high schools (senior class size of 50 or less) were less likely to enroll at Richmond, Ohio Wesleyan, and Bucknell.

For career plan and personal statement orientation, few differences between predicted and actual yield rates were statistically significant, partly because only a small number of cases were available for analysis. Nevertheless, some interesting differences did occur. Intellectually oriented acceptees tended to enroll at several colleges at a very different rate than predicted, although only two such differences were statistically significant. Bucknell tended to enroll more students interested in a business and technical career than a service career. (This result appears consistent with the discriminant analysis of Figure 7.5.)

The residual yield rates shown in Table 7.3 speak to the question of which characteristics tend to be associated with the matriculation decisions of individual students. To estimate a characteristic's overall numeric effect on enrollment, it is necessary also to take into account what proportion of acceptees had that characteristic. Such proportions are shown in Table 7.3 for all colleges combined. Although the proportion of students with a given characteristic naturally varies from college to college, it is clear that the impact of some characteristics is limited by the fact that the group is small. For example, the negative residual rates for minority students are often large, but those residuals typically mean only 5-20 fewer minority students enrolled than would be expected. Losing that many minority students may be quite important to the college; a similar loss in some other category may be less critical. In general, the pattern of Table 7.3 is more instructive than individual weights. Since results for particular colleges surely vary somewhat from year to year, an institution would be wise to examine such yield patterns in successive cohorts before making any adjustments in recruiting strategy.

Table 7.4 presents a similar analysis of residual yield rates by state of residence. Only 16 states have been analyzed because the number of

Table 7.4 Residual Yield Rates for Groups of Acceptees by State of Residence[a]

State	*Residual Yield Rates at Each College*								
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL
Arizona	–	–	–	−7	–	–	–	–	–
California	–	–	–	0	–	−3	–	–	–
Connecticut	−10*	−1	−3	15	0	1	0	−3	–
District of Columbia	2	–	17*	–	−2	8	−11	2	–
Florida	−26*	–	–	–	–	–	–	–	–
Illinois	–	–	6	3	3	2	−4	–	−5
Maryland	1	–	−5	–	−5	–	−21*	3	–
Massachusetts	2	−9*	12*	–	−6	1	5	−4	–
Michigan	–	–	−16*	–	−20*	–	–	–	0
New Jersey	2	0	11*	–	−4	10	−3	−1	–
New York	−4	−1	−1	−19	−3	−3	0	−6*	–
North Carolina	−22*	–	–	–	–	–	–	–	–
Ohio	–	–	−2	–	4	−3	1	−8	2
Pennsylvania	9*	1	7	–	−4	6	12*	4*	–
Virginia	0	–	−2	–	−1	−3	–	−1	–
Washington	–	–	–	12	–	–	–	–	–

a. Data are based on all acceptees for each institution. Entries are actual percent of acceptees enrolled minus the percent that would be predicted to enroll on the basis of high school rank, test score, distance, interview, and alumni parent. A dash (–) indicates that fewer than 20 cases were available for computation.

* $p < .05$.

acceptees from other states was insufficient. Of these 16, some states, such as California, Florida, and North Carolina, are relevant for only one or two of the nine institutions. Richmond experienced significant negative residual yield from three states (Connecticut, Florida, and North Carolina), and a positive residual yield rate from one state (Pennsylvania). Kenyon had significant positive yield rates from three states (District of Columbia, Massachusetts, and New Jersey) and only one negative (Michigan). Williams had no significant residual yield rates by state of residence. Seven of the nine colleges experienced negative residual yield rates for residents of New York, although only one of these was statistically significant. In contrast, six of the nine had positive residual yield rates from Pennsylvania, and three of these were statistically significant.

There are regional variations, but the anticipated decline in the pool of young students nationally has caused most colleges to attend far more to the application and enrollment process than they have in the past. The findings of this chapter are especially relevant to those concerns. The data leave several impressions.

Surely many considerations come into play when students decide

where to attend college, but in these analyses both application and enrollment decisions were largely determined by academic ability, geographic mobility, and financial need. These are critical variables in monitoring enrollment in individual colleges. A routine method of taking these measures into account—perhaps a variant of the residual analysis—could be helpful to institutions in better planning and maintaining their recruitment efforts with particular groups of candidates.

The influence of unique institutional situations is also apparent: in the particular geographic patterns of application and yield, in the representation of alumni children and minority students, in the draw from private secondary schools, and so on. Such patterns are related to the historic roles and reputations of individual colleges, to the markets or constituencies different institutions have traditionally served, and sometimes simply to the happenstance of location. Such circumstances may be difficult or impossible to change, but new priorities in recruitment can be introduced over time—particularly priorities based on student characteristics not in acute demand by most colleges.

In recruitment there is certainly the possibility of and, one might say, the need for a better understanding of those characteristics that reflect the student's orientation to education. Student interests and goals presently have only a very limited influence on the theory and practice of enrollment management. Such personal qualities may have an important bearing on educational programming and the value of the educational experience to the student—if in fact, it is possible to improve the fit between student and college. It proved to be difficult in these analyses to usefully describe institutional differences in such personal qualities of applicants, largely because some of the most useful measures were available only for entering freshmen. The following chapter gives more attention to these issues.

8

The Freshman Class—Characteristics, Experience, and Performance

Of the 25,000 applicants in the Personal Qualities Project, some 5,000 freshmen matriculated at the nine participating colleges in fall 1979. This chapter addresses several questions.

- What are the characteristics of these freshmen as a group; what personal qualities do they exhibit in achievement, experience, and background; what attitudes do they express about their educational goals and the reasons they chose their particular colleges?
- How do these college freshman classes compare; in what respects are they alike or different and to what extent?
- How did the experience of these students during their first year change their attitudes about goals they had considered important and factors that influenced their college choice; to what extent did they think they had made progress toward goals that seemed important to them?
- How did the students perform in the freshmen year—in their own eyes and in those of their peers and the faculty?

The analyses reported here did not include a few late applicants, and foreign students were omitted because their backgrounds were not comparable with those of the domestic students. Consequently, these analyses were based on a total of 4,814 freshmen. Individual analyses typically involved fewer students because of small amounts of missing

data of one type or another. As will be discussed later, more limited samples were available for those analyses of data from questionnaires administered to freshmen after matriculation.

QUALITIES OF THE ENTERING FRESHMEN

The size of the nine freshman classes ranged from 382 to 776. Although most of the freshmen had not made a firm commitment to a degree program, they were asked to indicate their intended majors. They sorted themselves into eight roughly equal groups: arts and humanities, 13 percent; natural sciences, 13 percent; business, 12 percent; premedical, 11 percent; prelaw, 9 percent; social sciences, 13 percent; miscellaneous, 13 percent; and undecided, 16 percent. Appendix Tables D.4 through D.7 provide detailed profiles of the freshmen by sex, financial aid status, and intended major.

This is a group of very able young people. Forty percent were in the top decile of their high school class, and one-third had SAT scores over 600. Substantial numbers had a record of outstanding personal achievement that normally earns special recognition in the local community (i.e., a rating of 4 on the scale used to evaluate different aspects of the applications):

- Six percent earned such recognition for community service (e.g., special service award, president of a local chapter).
- Thirteen percent earned this rating for creative work in drama, art, music, writing, or crafts (e.g., local prize, formal showing of work, all-state band).
- Seventeen percent drew recognition for outstanding leadership (e.g., president, director, or founder of a major school activity).
- Thirty-one percent achieved recognition in athletics (e.g., team captain, member of a championship team).

Furthermore, one in six of these students earned the highest possible score (5) on a rating called follow-through. This is an indication of persistent effort for several years leading to clear recognition in two or more separate lines of personal endeavor. An example might be three years on the school paper, the last as managing editor, plus three years participation in track, including a district championship. Thus, one in six of these students showed real depth and diversity in their accomplishments. Although many others were quite active in high school, they did not reach this level of accomplishment.

Figure 8.1 summarizes key aspects of this group's achievement plus

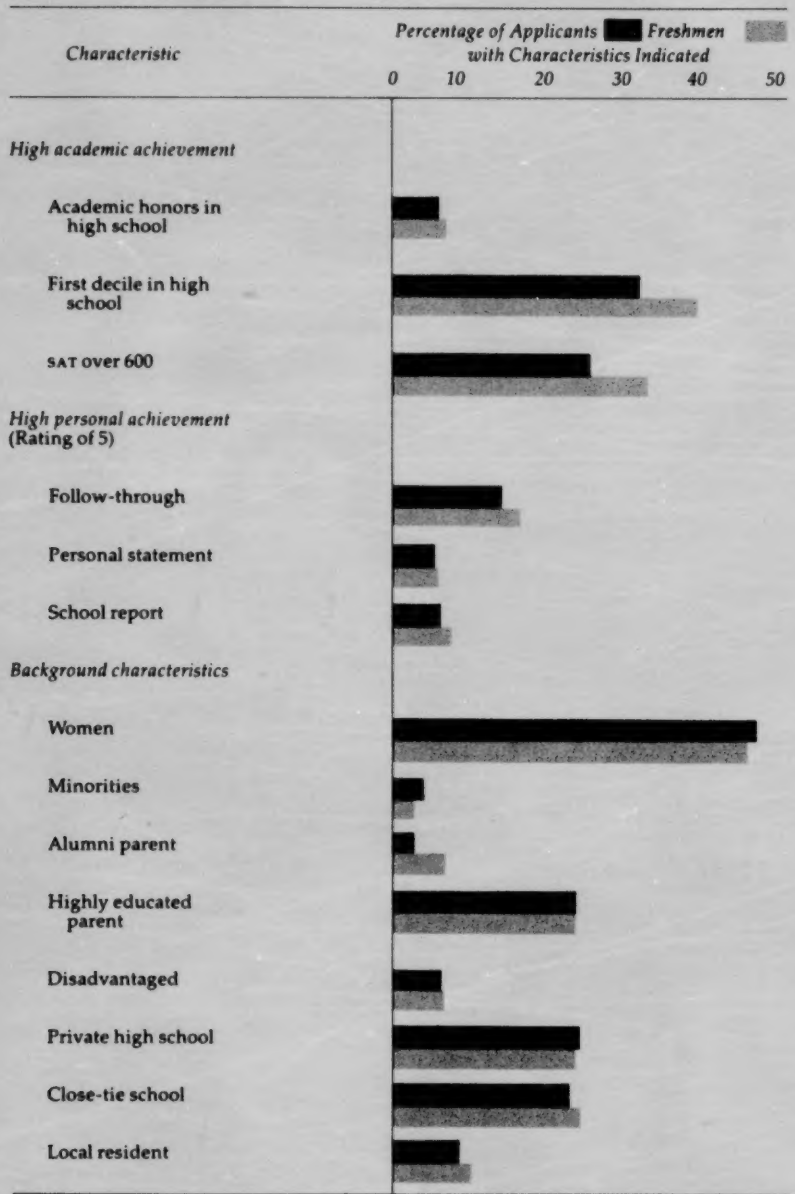

Figure 8.1 Comparison of applicant profile and freshman profile for all colleges.

other background characteristics. In the nine colleges, approximately half the freshmen are women, but only 4 percent are minority students. As one would expect in private selective colleges, about one freshman in four comes from a private secondary school, 10 percent are children of alumni, and only one in ten lives within commuting distance of the college. Much is revealed about these students' backgrounds by the fact that one in four have parents with a Ph.D. or comparable professional degree.

Figure 8.1 compares the profiles of applicants and enrolled freshmen. The freshman group has a greater representation of alumni children and is somewhat more able academically; otherwise freshmen are strikingly similar to applicants. One reason for this similarity is the competing effects of institutional selection and student enrollment decisions. Each college tries to pick the best applicants, but each applicant also tries to pick the best college. Among those applicants selected, some of the most attractive candidates are likely to end up at another college that is more selective or otherwise more desirable.

Within this group of 4,814 freshmen, there are some interesting differences in the profiles of students planning different degree programs (see Appendix Table D.4 for details). Natural science and premedical students are the most able academically; business majors rank lowest in that respect. Despite their high scholastic ability, the natural science majors submitted relatively poor written statements, and the premedical students were low in creative achievements. Prelaw students were strong in leadership and follow-through. Arts and humanities students had a high incidence of outstanding creative accomplishments and tended to submit strong personal statements. Finally, it is interesting that in this group of students, women were as likely as men to express an interest in natural science, but they were less oriented toward the professional fields of business, law, and medicine.

Sex differences among these freshmen seem to reflect role stereotypes to some extent. Despite slightly lower test scores, women were more likely to have ranked in the top decile of their high school class (49 percent versus 39 percent for males). Those freshmen who ranked below the fifth decile in high school were twice as likely to be males—some possibly with special athletic talents. Males gained recognition in athletics more frequently; women tended to excel in creative achievements. Males were employed significantly more, but the level of work experience was comparable for the sexes.

Students receiving financial aid are interesting to study because they are associated with a special allocation of resources and critical issues of social policy. Students who had done well in secondary school

were overrepresented among aided students. Half the honor students received some form of aid compared with three out of ten freshmen overall. Regarding other types of personal achievement, aided students were quite generally similar to freshmen. It is evident that aid awards in these colleges were based heavily on need. More than 90 percent of the minority and disadvantaged students received aid. Very small percentages of students from affluent homes got assistance. In fact, only six sons and daughters of 424 "prominent parents" received financial aid.

Personal objectives

As a moment's reflection makes clear, personal qualities go beyond a candidate's background and achievement. While this study has pointedly avoided the more psychological elements of individual character, there are certain aspects that are quite directly related to higher education and student development. These include, particularly, interests and goals—that is, what students want from higher education, why they chose a particular college, and the nature of their experience. The goal of admissions is not simply to fill a quota but to better inform and improve the educational process at the institution and build on its unique strengths. In order to do so, it is clearly important for the admissions committee to understand these qualities of the applicant as an individual.

The Common Application form contains much information that is relevant to these issues, but students' voluntary comments vary greatly from one application to another. For the purposes of this research, it was necessary to supplement application materials with a more structured questionnaire that would ask students specific questions regarding their interests and goals.

Consequently, a brief questionnaire (see Appendix A) was administered to all freshmen, either through the mail just prior to the fall term or in a freshman testing session soon after matriculation. The 87 percent who responded were representative of the freshmen in general.

The fall questionnaire listed just about every reason students are likely to give for choosing a college. They were invited to check up to five reasons they considered important in choosing the college they eventually entered. From a research standpoint, some of the reasons were not very useful because they were either redundant or seldom checked. The 12 reasons selected for analysis are shown in Table 8.1 with the percentage of males and females that marked each item.

The academic reputation of the college was marked far more often than any other reason. Next, but far down the line, came the attractive-

Table 8.1 Reasons Cited for College Choice by Entering Freshmen

Reason	*Males*	*Females*
This college has a very good academic reputation, generally.	75%	75%
I like the beauty and style of the campus.	36	45
I think I will like the social atmosphere here.	33	37
This college has a particular academic program that interests me.	21	25
I like this part of the country.	20	19
I like the rural, urban, or suburban location.	18	19
I have heard that the faculty is primarily interested in teaching.	17	16
I like the athletic programs and/or facilities here.	21	11
My contacts with admissions personnel were especially favorable.	14	16
I was not accepted at my first-choice college.	14	10
A high school teacher or counselor advised me to come here.	12	9
I was offered financial aid.	8	10

ness of the campus and its social atmosphere. As the table indicates, various other reasons were cited by substantial, but smaller, numbers of students. Some items at the bottom of the list warrant comment. Rejection by another college was not often cited, but the importance of this reason may be underestimated by these data simply because the respondents probably oriented themselves toward positive rather than negative reasons. In a similar vein, it would certainly be a serious mistake to assume that one could dispense with financial aid and the admissions staff without affecting the entering class. Although those items are not often marked as important reasons for college choice, they seem properly viewed as necessary but not sufficient elements in successful recruitment.

Evidently, women students are inclined to value the beauty and style of the campus in making college choices, while men are more interested in the athletic facilities. Otherwise, the sexes seem remarkably similar in their attitudes about what makes a good college.

An important purpose of the fall questionnaire was to find out what goals were considered personally important to the freshmen. The study was concerned not so much with particular training or aspiration to a specific career but rather with broad educational objectives. For this purpose, 12 paragraphs were written to cover basic types of personal development often cited as important objectives in the literature of higher education (Feldman and Newcomb 1969; Bowen 1977; Chickering 1969).

The goal statements appeared to fall naturally into three categories: intellecutal, personal, and career. They are shown in Table 8.2. Subsequently, a factor analysis confirmed that the goals did in fact fall into these three categories with one interesting reversal: Career exploration

Table 8.2 Developmental Goals Considered Very Important by Entering Freshmen

Goal	Very Important	
	Males	*Females*
Intellectual		
Liberal education: I see college as my great opportunity to read a lot, exchange ideas, learn about the significant cultures of the world, and generally to become an aware and more sophisticated person.	32%	46%
Intellectual skills: I don't want to just learn a lot of facts in college; to me it's very important to learn how to deal with those facts. For example, learning how to reason, evaluate information, and construct a defensible argument are high priorities for me.	54	53
Moral values: I am especially concerned about ethical, moral, and religious issues. In the next year or so I would like to get a better sense of my own values in this area.	7	11
Social awareness: I am very interested in community and social problems and would like to learn more about what's going on in the world. The opportunity to get personally involved in some sort of significant community service activity or environmental project would be important to me.	8	13
Creative talents: I like to express myself creatively. I already have some talent in an area of interest to me (for example, theater, music, painting, crafts, writing) and want to develop it further in college.	19	25
Personal		
Physical development: I'm an active person. I like sports and other outdoor activities. Developing my talents and interests in this area is important to me.	25	18
Leadership training: Extracurricular activities appeal to me because they are a good way to get a lot out of your education; especially learning how to organize resources, work with others, and take the lead in achieving an objective. I hope to participate fully in this aspect of college life.	29	34
Personal relations: I would very much like to develop a meaningful relationship with another person while I'm in college. If it's lasting, good; if it's not, that's okay too.	18	15
Social competence: In the next few years I would like particularly to develop more skill and confidence in dealing with different kinds of people. I think the social side of college is very important.	37	44
Career		
Professional training: My main goal in college will be to get training for the work I want to do, or make the grades I need to get into a good school after I finish here.	49	46

Continued on next page

Note. Freshmen were asked to rate the importance of the 12 educational goals as stated above.

Table 8.2 Continued

Goal	Very Important	
	Males	*Females*
Career (continued)		
Practical skills: I view college as a place where a person can learn practical skills valuable throughout a lifetime. I am especially interested in developing specific skills such as foreign language competency, computer programming, reading and math skills, good work habits, etc.	19%	23%
Career exploration: I am not at all sure what I want to do for a career. To me it seems important that I get a better sense of direction, and I hope to do that in college.	28	31

Note. Freshmen were asked to rate the importance of the 12 educational goals as stated above.

does reflect a career orientation, but negatively! That is, the students who are interested in professional training and practical skills are *unlikely* to feel that career exploration is an important goal. With hindsight it is easy to see that is a reasonable outcome. Those students who place special importance on professional training and development of practical skills are more likely to know what they want to do after college.

Table 8.2 indicates how many students rated each goal very important. Traditional academic goals scored quite high. These students particularly valued the development of intellectual skills (they did not want "to just learn a lot of facts in college"). Both the cultural (liberal education) and the practical (professional training) interpretations of higher education were often rated very important. Next in importance in the eyes of entering freshmen were career exploration and two goals that involve interpersonal skills: leadership training and social competence. All three apparently reflect a concern with personal coping. Two goals, moral values and social awareness, were considered very important by relatively few students—probably a substantial shift from the response that would have been obtained 10 years ago. The goals of men and women students were generally similar, although men attached more importance to physical development and women to social development. Also the women tended to attach more importance to intellectual goals.

There were some marked differences in goals considered most important by students in different undergraduate areas (see Appendix Table D.6). Students in social science and arts and humanities were somewhat more likely to rate intellectual goals highly. As might be expected, the social science students leaned particularly toward socially oriented goals, while the arts and humanities students placed great emphasis on creative endeavors. The goals of prelaw students differed

from those of other freshmen mainly in emphasizing intellectual skills at the expense of practical skills. Compared with freshmen generally, both natural science and premedical students attached somewhat less importance to most goals. An exception was professional training, which premedical students rated very highly—possibly responding to the phrase, "make the grades I need to get into a good school." Students intending to major in business gave less emphasis to intellectual goals and considered physical development somewhat important. Finally, as would be expected, students who had not identified a tentative major were likely to cite career exploration as a very important goal.

Overall, the responses to the goal statements are quite consistent with what would be expected from these groups of students. These results, as far as they go, suggest that the goal statement might provide an effective method for summarizing important student attitudes toward educational development.

COLLEGE DIFFERENCES

The preceding sections have focused on a total group of 4,814 freshmen. We now turn to the question of how the freshmen differed from college to college—on what measures and to what extent. Are there patterns that help to explain the distinctive character of individual colleges and their students? Does, in fact, the present admissions system result in demonstrably different types of students at different institutions—even among selective private colleges? If so, how can those patterns by better understood so that personal qualities in admissions can be evaluated more systematically and more effectively for the benefit of students as well as institutions?

Academic and nonacademic differences

One approach to understanding college differences is to examine how freshman classes vary on individual measures. What percentage, college to college, had particular background characteristics? How many students in different freshman classes scored high in a particular achievement? How many valued a particular goal? Such data are displayed in some detail in Appendix Tables D.8–D.10.

Some patterns are apparent. There are substantial differences among colleges on all measures of academic achievement: the number of students who were valedictorians or received academic honors, number in the top decile of their high school class, and the number with high test scores. The percentage of freshmen with SAT scores over 600 ranged from 7 percent in one college to 69 percent in another—a ratio of about 10 to 1. On the other hand, there is considerably less variation

from college to college in the percentage of students who obtained recognition for a high achievement (a rating of 4) on such dimensions as community service, athletic achievement, leadership, and creative accomplishments (art, music, writing, performing arts, and crafts).

That fact is dramatized in Figure 8.2, which shows how the colleges vary on two composite measures with a comparable scale. The academic achievement composite is based on the SAT and high school rank equally weighted. The personal achievement composite is based on the sum of seven measures coded from the Common Application form: community service, athletic achievement, leadership, creative accomplishment, personal statement, work experience, and school reference. As this figure makes clear, the spread among institutions is substantially greater for the academic composite than for the personal achievement composite.

There are substantial variations from college to college in the reasons students gave for choosing their college. Academic reputation was cited far more frequently at some colleges than at others, but several other factors contributed: geographic location, campus beauty, a particular academic program, athletic facilities, and teaching emphasis. In general, there is less variation from college to college in students' judgments of the importance of various educational goals. Several goals did vary substantially across colleges: professional training, liberal education, physical development, and creative interests.

As observed in Chapter 7, these nine colleges differ considerably in the extent to which they recruit locally and beyond their immediate regions. They also vary in the proportion of their students who came from private schools or whose parents went to selective colleges. Interestingly, however, they differ very little in the extent to which they attract students from homes where the parents are highly educated or prominent. Sex ratio is also fairly constant—slightly less than 50 percent women at eight of the nine colleges.

Differences in student orientation

Two problems are apparent when college-to-college differences are examined for individual personal qualities. First, there are simply too many measures to comprehend. Second, the measures tend to be too particularistic. It is therefore useful to have a limited number of broad measures with which to describe the students. To that end, a factor analysis (principal components with varimax rotation) was carried out with 12 reasons, 12 goals, and 9 achievement measures. The background measures were not included in this analysis because they do not directly reflect a student's personal orientation, as do the other measures.

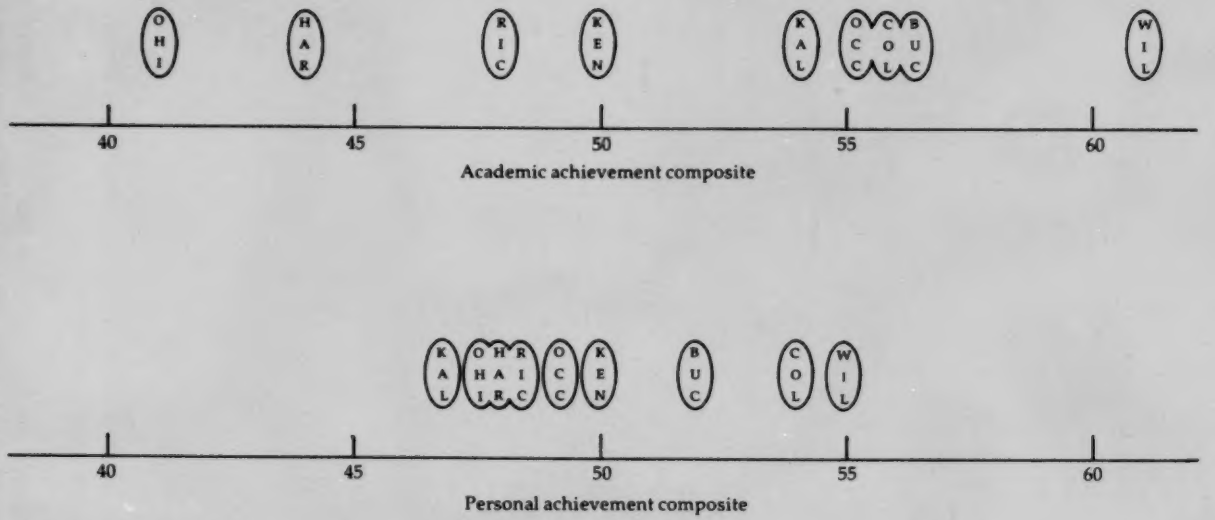

Figure 8.2 Comparison of college-to-college variation in prior academic and personal achievement of matriculating freshmen. (Ovals represent college means on comparable standard scales).

This analysis successfully identified nine *orientation factors*, most of which are based on more than one source of information (i.e., high school records, application information, supporting statements, and the questionnaire administered after matriculation). These factors are described in the following paragraphs by identifying the variables that had the highest loading on each factor. In some cases, the interpretation of the factor is clarified by describing how certain groups of students score on the factor (particular degree programs, private school graduates, minorities, and so forth; see Appendix Table D.11).

Factor 1 – Academic achievement

- .71 Scholastic Aptitude Test
- .70 academic honors
- .67 high school rank

This factor is unambiguous. The three measures obviously associated with academic achievement have heavy loadings; no other measures are included. Natural science majors scored highest on this factor (64 percent above average); minority students and private school students scored low (22 percent and 32 percent above average, respectively).

Factor 2 – Intellectual goals

- .51 social awareness
- .49 moral values
- .48 liberal education
- .45 intellectual skills

This factor corresponds closely to an intellectual factor in a separate analysis of educational goals. Social science students scored high (64 percent above average); students in prelaw and arts and humanities were also above average. Minority students scored high on intellectual goals (70 percent above average), and women were above average (59 percent).

Factor 3 – Creative interest

- .65 creative talents (an important developmental goal)
- .46 creative achievement in high school

This factor includes the two measures that reflect interest in creative endeavors such as music, art, and so forth. Business students scored

low; arts and humanities students scored high (33 percent and 79 percent above average, respectively).

Factor 4—Athletic interest

- .74 physical development (an important goal)
- .60 athletic achievement in high school
- .45 athletic facilities (a reason for choosing the college)

Evidence of athletic interest comes from three sources as indicated. Business students tended to score above average (61 percent), while arts and humanities students were below average (41 percent). Contrary to the promiment role minority athletes often play in major sports, minority students in this sample did not score high on athletic interest (40 percent above average).

Factor 5—Social interest

- .47 social competence (an important goal)
- .39 social atmosphere (a reason for choosing the college)
- .37 developing a meaningful personal relationship (an important goal)

This factor has elements of both a "collegiate" orientation to college and an interest in personal development. Business students were somewhat above average (59 percent), and minority students were somewhat below average (39 percent), but most groups did not vary greatly.

Factor 6—Uncertain goals

- .57 career exploration (an important goal)
- .33 did not choose this college for a particular program

The two measures that make up this factor reflect uncertainty about a career. Students intending to major in arts and humanities or social science were likely to score above average (63 percent and 61 percent, respectively). As would be expected, premedical students (but not prelaw) scored very low (28 percent), while students who indicated no choice of major scored very high (76 percent).

Factor 7—Practical goals

- .50 professional training (and getting good grades)

- .40 practical skills (such as computer programming and foreign language competence)

Both these measures are ratings of goals. Business students tended to score high (64 percent), and premedical students even higher (71 percent). The latter are above average on this factor because of the extremely high importance they attached to professional training, despite their apparently limited interest in practical skills.

Factor 8 — Nonacademic experience.

- .38 personal statement
- .28 not accepted by first-choice college (a reason for choosing this college)
- .27 work experience
- −.25 high school rank

This interesting but relatively weak and complex factor has only small loadings for the odd selection of measures indicated. Examination of the scores for different demographic groups suggests an interpretation. Minority students, disadvantaged students, and students receiving financial aid all scored low (26 to 31 percent above average); private school students scored high (72 percent above average). These relationships suggest that the factor represents students with an affluent background who are able to present an impressive personal history but whose somewhat weak academic work prevented their acceptance at an institution they regarded as more desirable.

Factor 9 — Leadership/service interests.

- .39 school leadership (achievement in high school)
- .23 social awareness (community service an important goal)
- .22 community activities (achievement in high school)

This is another relatively weak factor. Preprofessional students tended to score high, as did women and minority students (all groups about 60 percent above average).

It is important not to overinterpret the labels on these factors. The factors mean nothing more than the measures on which they are based. In addition to the uncertain reliability and accuracy of some of the individual measures, the factors certainly do not fully represent the interests indicated by the labels. If these important caveats are kept in mind, the

factors can provide a useful basis for examining the general nature and extent of differences in orientation.

For that purpose, Table 8.3 shows the percentage of entering freshmen in each college who scored above average on each factor. Several aspects of these data are well worth noting. First, even though all nine colleges are private and selective, the proportion of freshmen scoring high on particular factors does vary significantly from college to college. Second, there is substantially more variation on academic achievement than on any other factor. This conforms to the earlier comparison of academic and nonacademic achievement.

Third, the data indicate that each of these colleges has an individual character. Each institution has substantial numbers of above-average students on at least several factors. While pairs of colleges had generally similar profiles (for example, Richmond and Ohio Wesleyan, Williams and Colgate, Occidental and Kalamazoo), there is certainly no uniform pattern. Figure 8.3 illustrates that even in a goup of only nine colleges, it is possible to find two institutions (Occidental and Bucknell) whose freshmen have the same overall academic ability but otherwise are different in their orientation. In two other institutions (Hartwick and Williams), the freshmen vary widely in overall academic ability, but otherwise have a surprisingly similar pattern of interests and goals. Clearly, these nine private colleges are not cut of the same cloth. Although they differ in academic selectivity, that is a far from adequate basis for describing their differences.

Table 8.3 Percentage of Freshmen in Each College Who Scored Above Average on Orientation Factors

Orientation Factor	*College* RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL
1. Academic achievement	26%	18%	39%	67%	16%	85%	68%	68%	59%
2. Intellectual goals	44	57	50	64	43	68	57	43	59
3. Creative interest	43	57	62	56	48	54	50	41	56
4. Athletic interest	47	54	43	40	54	63	58	62	43
5. Social interest	55	53	50	40	55	57	60	52	38
6. Uncertain goals	53	58	69	46	53	62	64	49	42
7. Practical goals	63	56	44	45	55	47	52	62	64
8. Nonacademic experience	44	41	61	34	50	58	67	51	28
9. Leadership/service interest	54	45	46	56	42	61	58	55	41

Note. The table is based on 3,827 students who returned the fall questionnaire and otherwise had complete data.

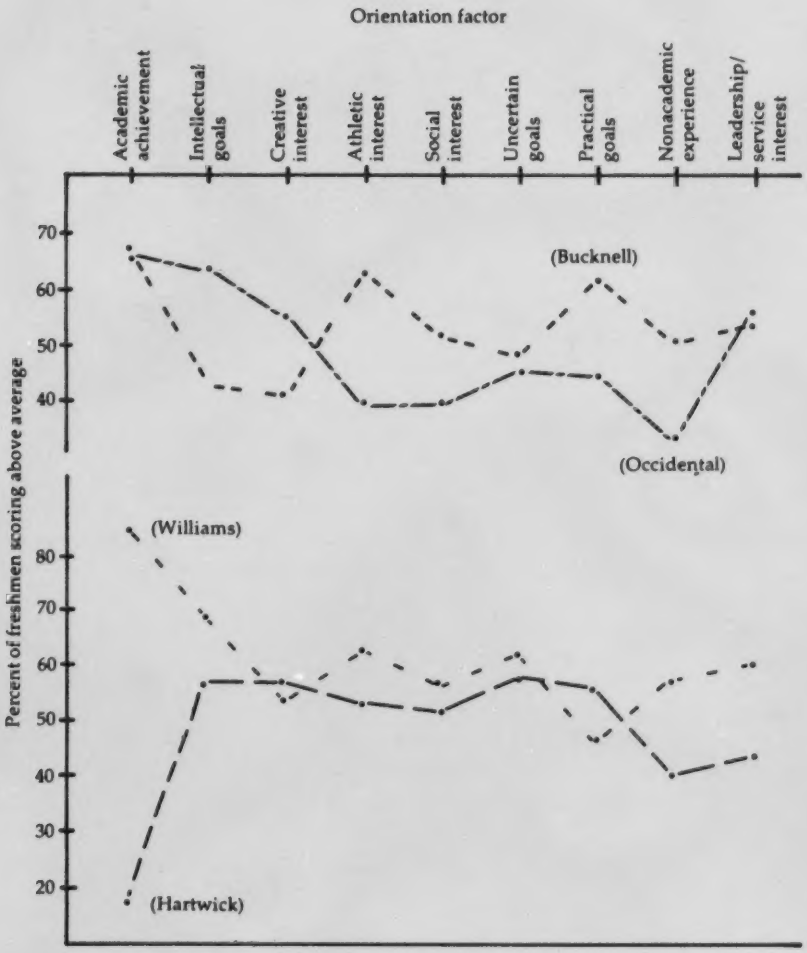

Figure 8.3 Illustrative differences between two pairs of college freshman classes.

FRESHMEN VIEW THEIR EXPERIENCES

Although this study made no effort to examine systematically the reactions of the freshmen to the myriad significant aspects of college life, one particular follow-up at the end of the year was important. We had the students' judgments at the beginning of the year as to what goals they considered important. Their changing attitudes about these goals

and their perceptions of how they were progressing are both important aspects of educational development. On the one hand, goals are properly viewed as important personal qualities; on the other hand, achievement of those goals is an important outcome that reflects a successful educational program and presumably influences recruitment and retention. Similarly, freshmen were asked on the basis of their first year's experience at the college to reflect on whether the reasons they had given for choosing that college now seemed good or poor.

These questions were included in the spring questionnaire (see Appendix A) administered by mail by the admissions office during April and May 1980. In relying on data from questionnaires filled out voluntarily by students, there is always the reality of some nonresponse and the need to gauge its effects on the results obtained.

With two follow-ups, the response rate to this questionnaire was 71 percent. The spring respondents were representative of all freshmen in most respects, but as would be expected, they differed on grades earned and dropout rate. This was partly because some underachieving freshmen were already gone when the questionnaire was administered, and partly, no doubt, because discouraged students were somewhat less likely to respond. It is difficult to say to what extent that assumption is accurate. No attempt was made to "correct" the spring questionnaire data because it was assumed that nonresponse was to some extent correlated with the nature of questionnaire answers. That is, there is no effective way to correct for the fact that spring questionnaire respondents do not reflect accurately the attitudes of all freshmen. It is probably safe to assume, however, that the following data err somewhat on the optimistic side in characterizing these students' reactions to their freshman year.

In the spring questionnaire, students were shown a list of the same reasons for choosing a college to which they had responded the previous fall. They were instructed as follows:

> Back in September, entering freshmen were asked to respond to the statements below to indicate what considerations influenced their decision to come to this college. Students checked whichever items seemed important to them at that time. Having had some experience here and knowing what you now know about college, you may have a somewhat different view than would an entering freshman. Do some of these items strike you as particularly good or poor reasons for coming to this college? If so, circle good or poor as appropriate. Mark only those few that seem especially important.

We were particularly interested in how students responded to those reasons they had checked as important considerations in the fall. That

is, how much satisfaction or disillusionment was in evidence by the end of the year? In the spring, students still regarded those important considerations as good reasons on the whole (72 percent of the time). In relatively few instances (6 percent), they decided that a reason previously thought important was actually a poor basis for choosing their college. General academic reputation held up best of all; in the spring more than 90 percent still thought it was a good reason for their choice. The students did react somewhat less positively to the influence of school counselors and college admissions staff as a basis for college choice.

And what of differences among the colleges? While different freshman classes expressed about the same overall extent of mild disagreement with their fall judgments, the pattern did vary somewhat from college to college. That is, after some college experience, students did change their opinions about what constitutes a good reason for college choice, but the nature of the changes varied from college to college.

Evidently, during their freshman year, students at different colleges developed some very different views concerning the quality of teaching. From college to college the percentage who thought emphasis on teaching a good reason for choosing that college varied from 40 percent to 80 percent. Social atmosphere was another characteristic on which there were considerable differences of opinion across colleges—some freshman classes evidently being quite pleased with what they found and others rather disappointed. These results tend to support the idea of student-institution fit in college admissions; that is, a student with a given set of expectations is more likely to have them fulfilled at some colleges than at others. (See Appendix Table D.12 for details.)

With respect to educational goals, the main question was the extent to which students felt relatively satisfied or dissatisfied with their progress in the spring. Another question of some interest was whether or not students changed their opinions about the importance of different goals on the basis of their experiences during the freshman year. Consequently, students were asked in the spring questionnaire to rate the importance of those goals a second time, presumably without accurate memory of their ratings the previous fall.

In general, students' judgments regarding the relative importance of the various goals did not differ greatly from fall to spring, but there were some interesting shifts. While professional training (including good grades) remained an important goal for most freshmen, there was a significant drop (48 percent to 37 percent) in the number who considered that goal very important. There were small but significant increases in the percentage of students who thought it very important to

develop personal relations and social competence, but by spring, freshmen were evidently less likely to regard extracurricular activities an effective way to pursue such interpersonal goals. There were also small but significant increases in the proportions of students who considered career exploration and moral development important educational goals. In general these look like healthy changes. They tend to represent a more mature view of college as a broadening and socializing experience.

A more significant question is how the students viewed their progress toward goals in the spring. Overall, responses to the spring questionnaire indicated that students were satisfied 60 percent of the time and dissatisfied 16 percent. Student responses for different goals are summarized in Figure 8.4. Because the length of the bars represents the proportion of students who considered these goals very important in the fall, the figure depicts both the proportion and the absolute number of students who were satisfied or dissatisfied with their progress in these areas in the spring.

Proportionately, the students seemed to be most satisfied with their progress in liberal education, physical development, and social competence. In these areas, three students out of four reported satisfaction with their progress to date. Proportionately, satisfaction was lowest in career exploration and social awareness.

A useful and somewhat different view of expectations comes from examining the absolute size of the gray and white areas in Figure 8.4. This gives an indication of the actual number of freshmen who thought that important needs were not being met. From this view, the three goals with the largest number of dissatisfied students (gray and white areas combined) were intellectual skills, professional training, and career exploration. For each of these goals, the interpretation is that among all freshmen, one in five considered the goal very important but was not satisfied in the spring with his or her progress. Lack of satisfaction with professional training might be discounted because it probably reflects the inevitable recognition by many B students that they are going to need more A's to get into a good professional school. This leaves two trouble spots where there seems to be need for more attention to improved student development: intellectual skills and career exploration.

Statistically significant differences were apparent from college to college in students' satisfaction or dissatisfaction with their progress toward educational goals. When all goals were lumped together, differences were not large college to college, but there were interesting and more substantial differences among colleges in student reactions to progress toward individual goals (see Appendix Table D.13). There were

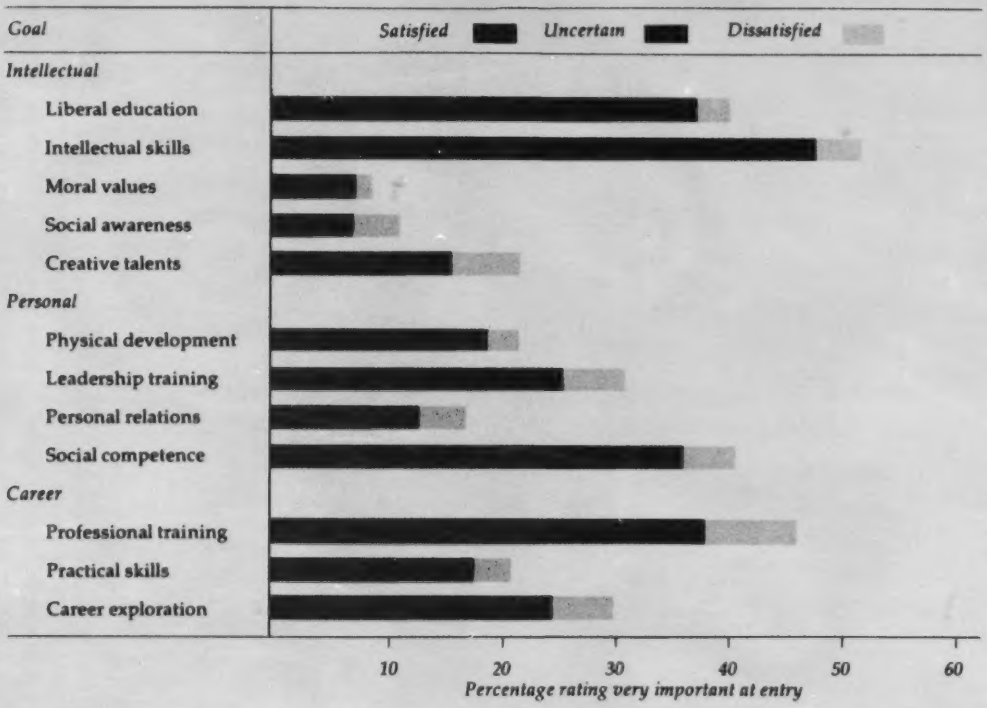

Figure 8.4 Freshman perception of important goals in fall and their satisfaction with progress in spring.

wide differences, for example, in the practical skills goal. The net satisfaction with progress toward this goal (satisfaction minus dissatisfaction) ranged across colleges from 15 percent to 56 percent. With respect to the liberal education goal, the same statistic ranged across institutions from 42 percent to 80 percent. There were also large differences across colleges in satisfaction with progress toward social awareness. In this case, net satisfaction ranged from −38 percent at one college to +32 percent at another. Again, these results suggest that a given student's interests are likely to fit some colleges better than others.

HOW THEY PERFORMED

Chapter 2 discussed several legitimate reasons colleges may have for the use of various personal qualities in admissions. One reason is the expectation of attracting and enrolling students who are likely to do well in college. Therefore, to follow these students and assess how they perform is essential to evaluating the role and usefulness of admissions measures. But what is meant by "perform well"? What performance criteria are most relevant?

A standard criterion is the grades a student earns. The grade point average represents the collective faculty judgment of how well students have mastered the demands of their course work. On the other hand, grade point average is not a sufficient criterion. Additional evidence must be found if one is broadly concerned with students' intellectual development, with their personal growth, and with the success of the college–student fit.

This book is based on information available through the freshman year, and there are clear limitations on how much one can expect to learn about college performance from only the first year. For one thing, freshmen have not had sufficient time to achieve what they are likely to; for another, the faculty typically do not know students well enough to make reliable judgments about their accomplishments. These students will be followed to their senior year in college. In that phase of the work careful attention will be given to assessing "success" broadly and in keeping with institutional objectives. Such long-term criteria form the best basis for judging the value of personal qualities in admissions. Meanwhile much can be learned from the first year's experience.

Four criteria were used in this analysis of freshman year performance. The first two are traditional and well accepted: (1) grade point average and (2) persistence. To these were added two experimental measures: (3) the student's own view of his or her progress in college and (4) the judgment of peers as to who showed signs of significant

accomplishment during the first year. In the following paragraphs, each of these four measures is described briefly, along with an indication of how the freshmen performed college by college.

Freshman grade point average (FGPA)

Most of the colleges used a standard four-point grade scale in which A equals four and F equals zero. Where necessary, conversions were made so that all college grades are reported here on the same nominal scale. This does not mean, of course, that a B at one college is necessarily equal to a B at another college. The cumulative average for the freshman year was recorded for each student—usually based on two terms but on only one term when students withdrew early.

With one exception the average grades of the freshman class ranged from 2.7 to 2.9 (see Table 8.4). About one student in five met the typical requirement for the dean's list—3.3. At the other end of the scale about one student in ten earned less than a C average in the first year at most of the colleges. Clearly these data are in line with the pattern of higher grading in recent years. For example, Bejar and Blew (1981) examined some 2,800 validity studies carried out through the College Board Validity Study Service. He found that average freshman grades in that large group of colleges increased progressively from 2.0 in 1964 to 2.6 in 1974, and leveled off thereafter.

Table 8.4 Four Criteria of Freshman Performance

Freshman Performance Criterion	*College*									*All Colleges*
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL	
Grade point average										
% 3.3+ (usual requirement for dean's list)	30	19	19	26	12	23	21	24	20	21
% Less than C	9	9	13	6	28	7	11	9	9	12
Class average	2.9	2.7	2.7	2.9	2.4	2.9	2.7	2.8	2.7	2.7
Dropout (% not returning, fall 1980)	14	14	7	11	18	3	3	5	15	10
Goal progress (self-rating)										
% Mainly satisfied	45	49	42	40	40	37	42	39	36	41
% Mainly dissatisfied	13	14	10	11	14	9	9	10	13	11
Peer nominee (% receiving 2+ nominations)	14	15	20	12	12	19	17	20	14	16

Persistence (or dropout)

There are many causes of dropout and several ways of defining it. For the purposes of this study, persistence was defined as returning in the fall term of the sophomore year. A student on official leave (e.g., on an institutionally sponsored work program), was treated as enrolled. Otherwise, unregistered students were classed as dropouts, even though some might later return. No effort was made to differentiate first- and second-term dropouts or voluntary withdrawals as distinct from academic failures. It seems reasonably certain, however, that dropout due to poor grades occurs largely because of student discouragement rather than institutional action, because in most of these colleges the formal system of academic standing seldom places a freshman in real jeopardy; that is, very few actually flunk out.

As Table 8.4 indicates, about one student in ten failed to return in the fall of the sophomore year. There were however, large differences among the colleges in the dropout rate—from 3 percent to 18 percent.

Goal progress composite

Asking students to rate their own progress is based on the idea that college is an important means of individual development. Strong value is placed on the individual's assuming responsibility for his or her learning. The individual's judgment of whether or not goals are met is itself an important outcome of the college experience. Self-assessment is not well understood, however, and its objectivity and reliability are generally suspect. In order to be valid, self-ratings should be well informed, and it is not obvious that most college freshmen have a reasonable basis for judging their progress. For all these reasons any such criterion measure is exploratory at best.

As described earlier, students were asked to indicate in the spring if they were satisfied or dissatisfied with their progress toward each of 12 goals. In order to assess the extent of satisfaction or dissatisfaction with progress during the year, a composite measure was computed. It ranged from +1.0, indicating that the student was satisfied with progress on all goals considered important in the fall, to −1.0, indicating dissatisfaction in all such cases. A student was classified as "mainly satisfied" if this composite was above .5 (satisfied most of the time) and "mainly dissatisfied" if the score was negative (dissatisfied more often than satisfied).

As Table 8.4 indicates, these freshmen were, overall, mainly satisfied with their progress toward important goals, and there were no

large differences from college to college. About two students in five fell into the mainly satisfied category, and only about one in ten were mainly dissatisfied. Recognizably, these standards are somewhat arbitrary and are not to be taken too seriously. Furthermore, it is debatable that being satisfied with progress in all important respects at the end of the freshman year is "better" than some degree of dissatisfaction.

Peer nominee

The use of peer nominations in this study is also experimental—an effort to determine whether or not classmates can sense as early as the first year which students are likely to be judged outstanding seniors by the faculty. As noted in Chapter 3, there have been instances where peer nominations proved to be excellent predictors of future success as a military officer. Peer nomination is included here not because it is a reasonable basis for an institution to judge the outcomes of the educational process or to validate selection procedures, but because it may be helpful in anticipating subsequent success and in understanding how personal qualities are related to different types of desirable performance in college. In particular, peer nominations may well reflect a broader view of college success and may therefore depend more on personal qualities than do college grades.

Respondents to the spring questionnaire were asked to nominate one or two classmates they thought had already been successful in college; that is, shown significant signs of leadership, personal or intellectual development, or unusual accomplishment. Not all respondents offered nominations, and those who did spread their votes over a number of classmates. Students who received two or more votes were defined as nominees for the purposes of this study; 16 percent were so nominated. That percentage varies somewhat from college to college, largely because of the number of people making nominations rather than the accomplishments of the various classes.

Relations among performance measures

One useful way to understand the academic performance and experience of these freshmen is to examine the relationships among the four measures described above. A question of primary interest is how persistence relates to the grades students earn. Students drop out of college for a variety of reasons not necessarily directly related to their academic experiences (e.g., personal problems, a financial shortfall, competing interests, and so forth). The usual assumption, however, is that low grades are the major cause of dropout.

Figure 8.5 throws interesting light on this matter by showing that for students who have at least a 2.0 average in the freshman year, there is essentially no relationship between grades and dropping out. Attrition was approximately 8 percent for C students and 8 percent for A

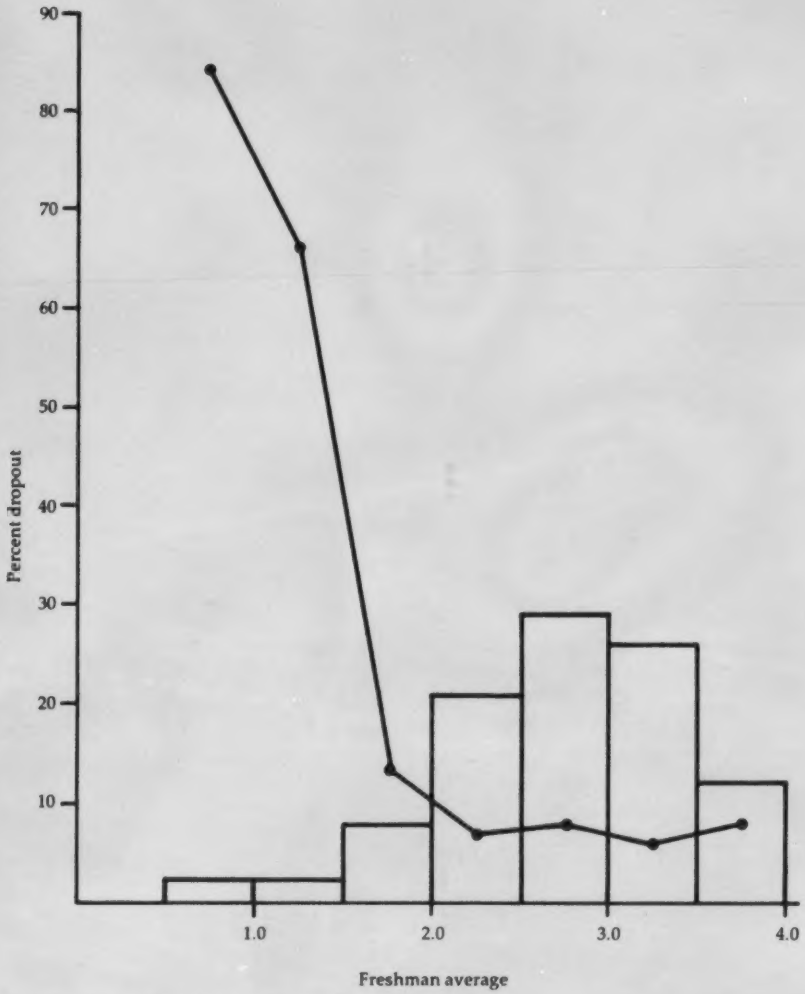

Figure 8.5 Relationship between freshman grade point average and dropout. (Histogram shows distribution of freshman grades.)

students. As grade point average dropped below 2.0, there was a rapid increase in the likelihood a student would not return for the sophomore year, but as the figure shows, there were very few freshmen in that low grade range. As a result, for the great majority of freshmen, grades seemed to have little direct bearing on dropout.

How is self-perceived progress toward goals related to grades earned and dropping out? There was surprisingly little relationship between academic performance and the extent to which students reported dissatisfaction with their progress overall in the spring. Ten percent of those in the 3.0–4.0 grade range were mainly dissatisfied; only 13 percent with grade averages below 2.0 were mainly dissatisfied. On the other hand, satisfaction with progress did appear to be related to persistence. This was true even among students with grades above 2.0, that is, those with acceptable academic progress.

All this suggested a reasonable proposition: some students drop out because of discouragement over poor grades, others drop out because of dissatisfaction unrelated to their grades. We examined this commonsensical hypothesis in the five colleges that had significant attrition (more than 10 percent). Figure 8.6 clearly confirms the hypoth-

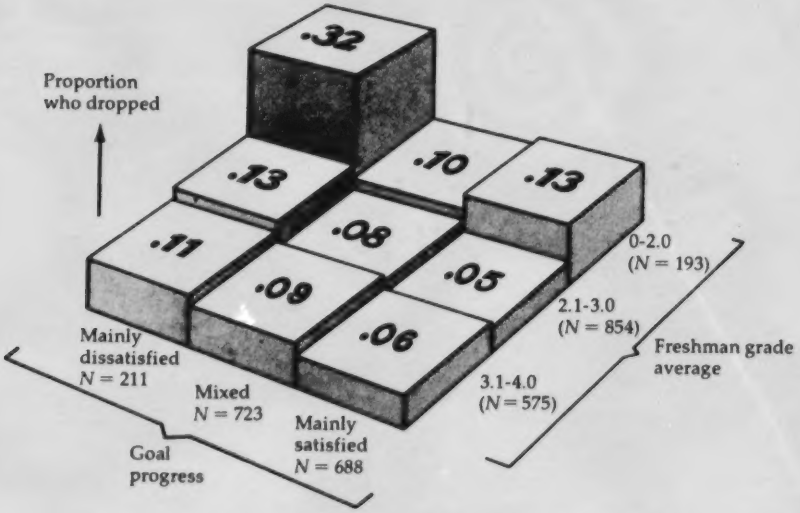

Figure 8.6 Freshman dropout as a function of freshman grade point average and the student's perception of satisfactory progress toward important personal goals. (Based on 1,622 freshmen in five colleges with dropout rates exceeding 10 percent.)

esis. Both poor grades and general dissatisfaction with progress, irrespective of grades, are associated with dropout. In fact, logistic regression analysis indicated that in four out of five of the colleges, the goal progress composite had a heavier weight in predicting dropouts than did grade point average. It is quite possible that dropouts early in the year may have been reacting more specifically to poor grades. Figure 8.6 underrepresents the level of freshman attrition because the data are based on spring questionnaire respondents. Some students had already left; some others preparing to do so were probably uninterested in a questionnaire from the admissions office.

Finally, how were the peer nominations for success in college related to other performance criteria? These freshmen were much more likely to nominate classmates who were making very good grades. Among students with an FGPA of less than 2.0, there were 5 percent nominees (at least two nominations). In the 2.0–3.0 range there were still only 9 percent, but there were 29 percent nominees among students with an FGPA higher than 3.0. This result indicates at least some agreement with the faculty's judgment regarding academic success. On the other hand, there was little correspondence between peer judgment and self-ratings of progress. Among nominated students, 43 percent were mainly satisfied; among students not nominated, 41 percent fell into the same satisfied category. As would be expected, relatively few dropouts were nominated.

In this chapter we have seen that there are substantial differences among individuals and among colleges as to the orientation of students, their reactions to college, and their performance. Is it possible to tell from personal characteristics of applicants who will do well—especially, who will do better than traditional academic measures would indicate? The following chapter addresses that question in detail.

9

Personal Qualities and Success in the Freshman Year

In considering which personal qualities are useful in admissions, the first question that comes to mind is whether or not particular characteristics identify applicants likely to do well in college. While improved predictive validity is not the only basis for using diverse admissions criteria, it is important to know what personal qualities can reveal about the potential for achievement in college—both academic and nonacademic—that is not already known from traditional academic measures. This chapter addresses that question.

There are different ways of viewing achievement, and only limited kinds of information about student performance are available after one year of college experience. The pages that follow describe how a wide variety of personal qualities relate to the four performance criteria defined in the previous chapter: freshman grade point average (FGPA), peer nomination for early signs of college success, self-rating of progress toward educational goals, and persistence (dropout).

Again, the notion of residual performance is used to analyze the follow-up data. There are two reasons for this approach. First, the issue is not simply whether or not students with particular qualities perform well in college. Applicants with unusual personal accomplishments in high school, very strong references, or impressive personal statements might all be expected to do well in college because, on the average, their academic achievements are also superior. If the admissions office considers giving such applicants special preference (i.e., a plus residual

selection rate) because of anticipated good performance, the issue is whether the students' *residual* performance is high. That is, do the students perform better than would be expected on the basis of academic measures normally used in selection?

A second advantage is that residual analysis affords a direct comparison with the analysis of selection decisions. If, at a particular college, the residual selection rate for a given type of applicant (taking academic credentials into account) is +10, we can readily determine whether or not the residual performance is also positive.

Thus, in analyzing how the students did in college—particularly the grades they earned—it is convenient to use the same general method used to examine selection decisions: first, predict probable performance on the basis of high school rank (HSR) and SAT scores, then compare the prediction with actual performance. In the following section, the traditional academic predictors are examined as a baseline for evaluating the four performance criteria.

TRADITIONAL ACADEMIC PREDICTORS

Given the wealth of information about these applicants—accomplishments, experience, references, honors, test scores, class rank, school background, and family background—what were the best predictors of freshman average? Are HSR and SAT indeed the most accurate predictors?

Twenty-five measures were selected to represent the many different types available. Regression analysis indicated that in all colleges either SAT or HSR was the best single predictor. As we shall see in more detailed analyses, the weights for HSR and SAT in predicting FGPA were consistently and substantially higher than those for any other measure of achievement in high school. This expected finding supports the reasonableness of using HSR and SAT as a baseline for analyzing freshman performance. It is interesting to compare these two measures in predicting freshman grades and how much weight they had in selection.

Rank versus test scores

As Table 9.1 shows, the predictive validity of HSR and SAT combined is slightly above .50, typical of average results in selective colleges. As expected, results vary somewhat from college to college, but generally HSR and SAT contribute about equally to freshman grade predictions at the nine institutions surveyed. At the undergraduate level HSR has usually been a somewhat better indicator of college success (Schrader

Table 9.1 Predicting Freshman Average on the Basis of High School Rank and Test Score (with a Comparison of Grade Prediction Weights and Selection Decision Weights)

College	Number of Freshmen	Correlation with FGPA		Multiple	Raw Score Weights*			
					Freshman Grades		Selection Decision	
		r_{HSR}	r_{SAT}	R	HSR	SAT	HSR	SAT
RIC	649	.39	.30	.46	.032	.029	.022	.034
HAR	374	.45	.46	.55	.023	.027	.017	.017
KEN	363	.45	.29	.47	.030	.016	.018	.014
OCC	383	.30	.52	.55	.016	.033	.021	.015
OHI	687	.56	.38	.59	.040	.018	.005	.009
WIL	455	.47	.61	.65	.020	.034	.008	.010
COL	635	.25	.45	.49	.013	.037	.011	.027
BUC	766	.40	.37	.48	.028	.027	.025	.022
KAL	381	.46	.41	.54	.037	.022	.008	.009
Average		.41	.42	.53	.027	.027	.015	.017

* See technical note 11 for discussion of comparability of weights.

1971). The most recent compilations of validity data (Ramist 1981) indicate, however, that admissions tests are approaching parity with high school performance in predictive effectiveness—possibly because grade inflation has weakened HSR in recent years. Both measures together provide, as usual, better predictions than either does alone.

Is the relative amount of weight on HSR and SAT in selection justified by their validity? By a wide margin admissions officers say that high school performance (rank or grade average) is the single most important factor in admissions (American Association of Collegiate Registrars and Admissions Officers and the College Board 1980). However, this seems almost always an assumption based on policy intentions rather than on actual analysis of selection decision. Test critics, on the other hand, believe that admissions decisions are based heavily on test scores. The data in Table 9.1 do not support either view. In the nine colleges, HSR and SAT were about equally valid predictors of freshman grades and about equally weighted in selection.

Predicted grade composite

In several previous analyses we used an academic composite of HSR and SAT equally weighted, with the result scaled to a mean of 50 and a standard deviation of 10. Because it is comparable across institutions, the academic composite is useful for illustrating differences in selection

standards for, or academic ability of, entering freshman classes (see Figures 6.3 and 8.2). The academic composite is not useful as a baseline in evaluating performance across colleges because grading patterns vary substantially; that is, the same score is associated with different grades earned at different colleges. For example, the probability that a student with an academic composite of 55 would earn a B average in the freshman year was .23 at Williams and .70 at Richmond.

In order to provide a baseline for evaluating performance across colleges, a predicted grade (PG) was computed for each student on the basis of a linear regression equation that included HSR and SAT. Thus, the PG was based on the weights in Table 9.1 and was scaled to the grading pattern in the student's college. Given a student with a PG of 2.6, the best estimate of that student's actual earned grade would be 2.6, regardless of the college attended.

The PG is nothing more than a composite ability measure based on HSR and SAT, but the two components are optimally weighted for the best prediction in each college, and the PG is directly comparable with the grades earned by any student. Thus, the PG provides a simple method of determining if a group of students, on the average, does better or worse than would be expected on the basis of HSR and SAT. In that sense, PG is a good baseline for evaluating performance on the FGPA criterion. But how is the PG related to the three other criteria? Is it a useful baseline for them as well?

Academic ability and freshman performance

Figure 9.1 shows how academic ability, represented by the predicted grade composite described above, is related to the four freshman criteria. The criteria are depicted as membership in these four groups: students who made a B or better average, who were nominated (at least twice) by their peers, who were mainly satisfied with their progress, or who dropped out during or at the end of the freshman year. The solid curve shows the strong relationship between the PG and a B average. Almost all students with a PG of 3.6 fall into the B group; virtually none of those with a PG of 1.6 do. Clearly, in evaluating the grades earned by students with different personal qualities, the average PG of the group must be taken into account. Otherwise, erroneous conclusions might be drawn about the relationship between particular student characteristics and later performance when, in fact, the group's performance is in line with what would be expected from their academic ability.

Those students with high PGS are noticeably more likely to be nominated by peers than are those with low PGS—enough so that the

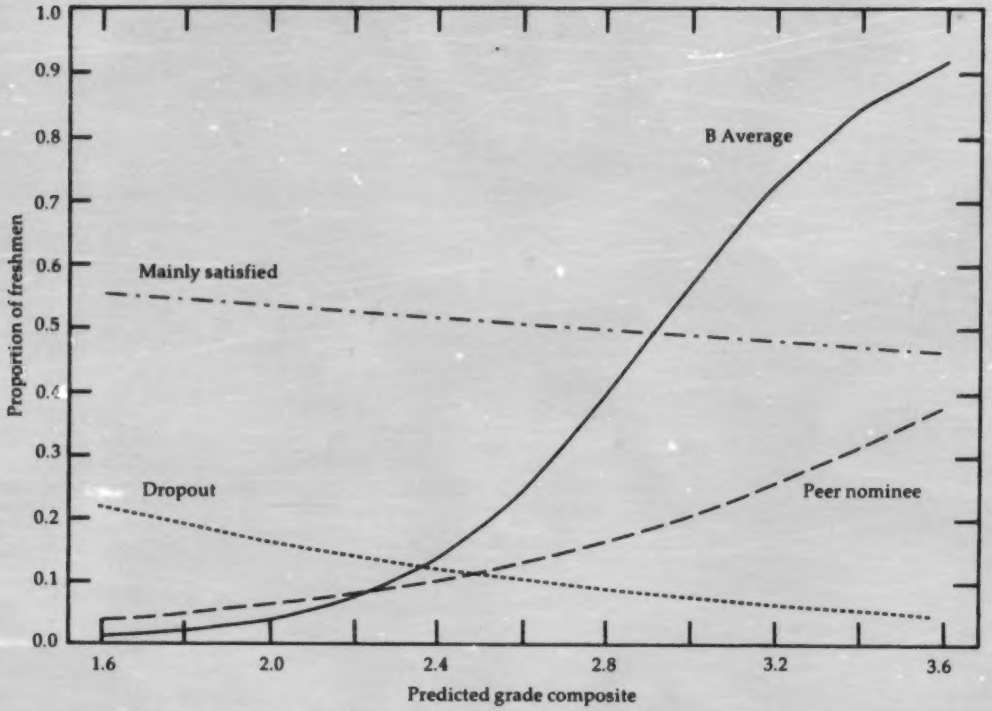

Figure 9.1 Logistic functions showing the relationship between predicted grade composite and probability of membership in four criterion groups (all colleges)

PG needs to be taken into account in examining the relationship between personal qualities and peer judgments regarding freshman success. Such is not the case with the self-ratings of progress toward goals. Students at the high and low ends of the academic ability scale fall almost equally into the mainly satisfied category.

The relationship of academic ability to persistence in the nine colleges is more complicated. On the surface the dropout curve in Figure 9.1 looks similar to the mainly satisfied curve; that is, persistence to the sophomore year did not seem to depend very much on the students' academic ability. This finding appears consistent with Figure 8.5, which indicated that for most students persistence had little to do with freshman grades earned.

From these data it would not be unreasonable to conclude that the dropout rates of students with different personal qualities could be taken at face value. That is, the academic ability of a group need not be considered in examining their persistence because it does not appear to play much of a role. This result is different from that typically found and will be examined further.

As it turns out, a negligible relationship between academic ability and dropout rate is an accurate description of these data only if the results are from a single college. Important differences across colleges are not revealed by Figure 9.1.

For three of the four criteria there is not a great deal of difference from college to college in the percentage of freshmen in the criterion group (e.g., the percentage of students nominated does not differ greatly, college to college). But the proportion of dropouts varies greatly from college to college, and those differences are strongly associated with the average academic ability of the class. Figure 9.2 shows the relationship: the average academic composite correlates $-.77$ with the dropout rate. This relationship creates a positive correlation between academic ability (plus other measures related to it) and persistence across colleges, even though none existed within individual colleges. Therefore, the association between dropout rate and college selectivity must be taken into account in an examination of persistence in the pooled group of 4,814 freshmen; otherwise, the analyses might well suggest associations between personal qualities and dropout tendencies that are largely nonexistent in individual colleges.

PERSONAL QUALITIES AND FOUR MARKS OF SUCCESS

The preceding discussion laid the groundwork for analyzing the relationship between personal qualities and success in college. Tables 9.2–9.4 show the results for three broad types of personal qualities: personal

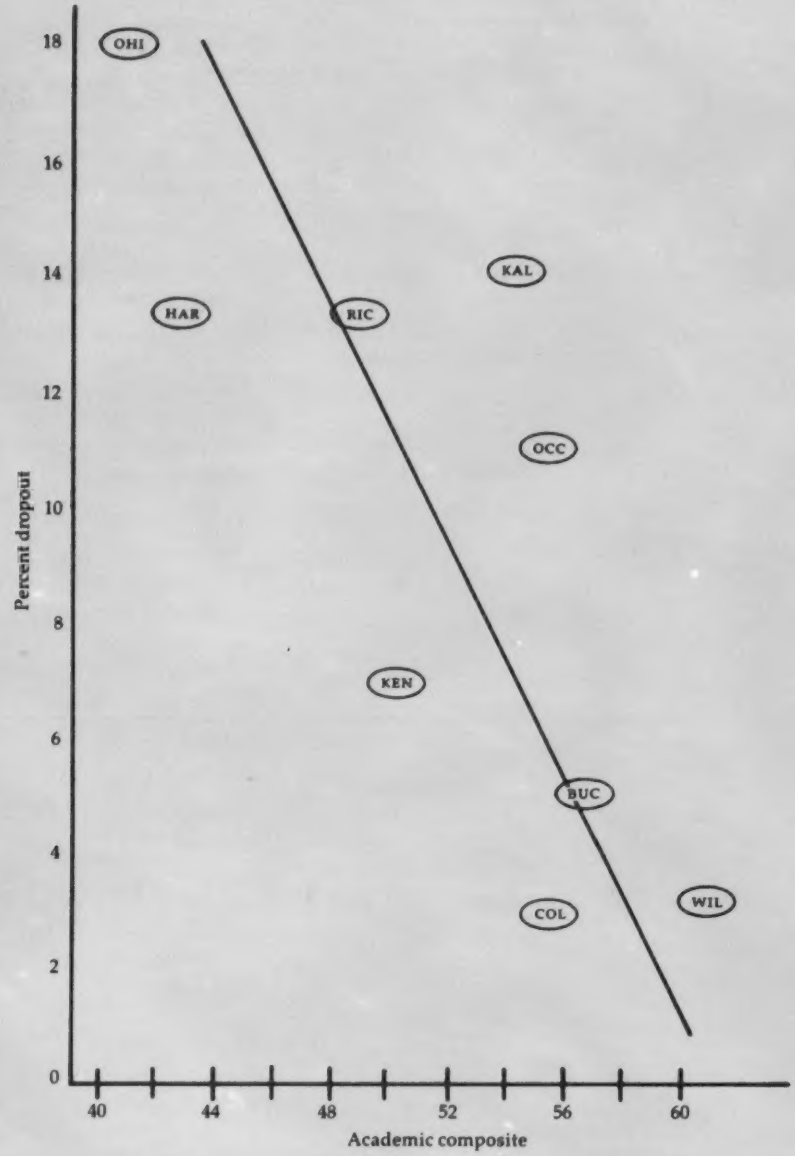

Figure 9.2 Relationship between average academic composite and dropout rate for nine freshman classes ($r = -.77$).

achievement, background characteristics, and educational objectives. Table 9.5 lists six types of ratings by college admissions staff. In all, these tables contain 58 measures, each of which defines a group. Some measures are already categorical in nature (e.g., women). More often the measure represents a scale, and the group is defined as high scorers on that scale (e.g., those who received a rating of 5 on the school report). The burden of the analysis is to see how each group did on each of the four performance criteria.

Freshman grades. The comparison here is between the actual FGPA earned by each group and the average grade predicted on the basis of HSR and SAT; that is, is the residual achievement significantly positive or negative? In most cases the difference between the predicted and actual grade average is less than one tenth of a letter grade. As an aid in interpreting these data, remember that if a group with an average PG achieves an actual grade one tenth of a letter grade higher than average, that is the equivalent to 55 percent achieving above the class norm rather than an expected 50 percent.

Peer nomination. One student out of six was nominated by at least two peers for showing signs of success in the freshman year. Because freshman nominations were positively related to academic ability, the predicted grade composite was used to compute (through logistic regression) a predicted nomination rate for each group. This predicted rate gives a better estimate of whether or not the personal quality in question is associated with a high incidence of peer nominations after the academic ability of the group is taken into account.

Goal progress. This column in the tabular results indicates the percentage of students in each group whose answer to the spring questionnaire stated they were mainly satisfied with their progress toward educational goals they considered important. Because this particular self-rating of success is not significantly related to academic ability, the figure is compared simply with the overall 41 percent of freshman respondents who were in the mainly satisfied category.

Dropout. Variation in the dropout rates of students with different personal qualities can be interpreted at face value, but as noted earlier, these observed figures can be misleading because of the considerable variation in the attrition rate from college to college. These tabular results include an expected dropout rate that only takes account of the colleges at which the particular group matriculated and the character-

istic attrition rate at those colleges. These expected percentages range from 4 percent to 12 percent because particular types of students were likely to attend colleges with high or low attrition rates. Comparison of the expected and actual percentages indicates whether the attrition rate was high or low, depending on where the students went to college.

The number of students in each group is shown in these tables. Where that number is large, a relatively small discrepancy between predicted and actual figures may be statistically significant (shown by an asterisk) but not important from a practical standpoint. The residual selection rates (from Chapter 6) are provided for comparison. They represent the actual percentage of such candidates admitted minus the percentage that would be expected to be admitted on the basis of HSR and SAT. In the following sections the results for different types of personal qualities are discussed in turn. Following that, we address the question of how predictable each of the four criteria is and what role personal qualities appear to play in forecasting success in the freshman year.

Personal achievement

The various achievement measures in Table 9.2 were somewhat more consistently related to different criteria of success in the freshman year than were the personal qualities in Tables 9.3 and 9.4. Results for the different types of achievement differed, however. Valedictorians tended to earn slightly higher grades than predicted, and students who earned academic honors in secondary school were slightly less likely to drop out in the freshman year. But overall the freshman performance of these high achievers was not substantially different from what one would expect on the basis of HSR and SAT. The next four groups in Table 9.2 had demonstrated four other specific types of unusual accomplishment in high school. These groups achieved slightly higher grades than expected, were nominated somewhat more often than expected, and dropped out at a slightly lower rate than average. The follow-through variable represented persistent application and significant achievement in more than one of the four areas. Follow-through is more consistently related to positive freshman achievement than is any other measure in Table 9.2. Recall, however, that relatively little preference was given in admissions to students with unusual accomplishment in high school.

There was more evidence of preference in the selection process in the case of students who had unusually good personal statements or references from their secondary schools. This was particularly true in

Table 9.2 Relationship of High Achievement in Secondary School to Four Criteria of Freshman Success

			Four Criteria of College Success						
			Average Grade		*% Nominated for Achievement*			*% Dropout in First Year*	
High Achievement	*Residual Selection Rate*	*N*	*Predicted*	*Actual*	*Predicted*	*Actual*	*Goal Progress % Mainly Satisfied*	*Expected*	*Actual*
Valedictorian	7	211	3.15	3.23*	25	27	36	6	5
Academic honors	4	434	3.08	3.12	23	24	34*	6	4*
Community activities	0	297	2.80	2.89*	17	19	42	9	7
Athletic achievement	2	1,451	2.68	2.69	15	19*	42	9	9
Leadership	3	807	2.81	2.85*	18	22*	43	8	6*
Creative talent	2	601	2.82	2.86*	18	20	42	9	9
Follow-through	4	819	2.79	2.84*	17	26*	43	8	6*
Work extent	1	496	2.66	2.67	15	21*	43	10	11
Work level	0	361	2.71	2.75	16	21*	40	9	6
Statement—writing	8	219	2.80	2.88*	17	25*	43	7	6
Statement—content	7	371	2.77	2.86*	17	20	40	7	6
School report	6	446	2.79	2.83	18	21*	40	7	8
Teacher reference	6	293	2.85	2.87	18	26*	39	4	4
All freshmen			2.73	2.73	16	16	41	09	09

*An asterisk on actual figures indicates a significant ($p = .05$) departure from the predicted or expected value for that group. Predictions are based on HSR and SAT; expected dropout rate is the overall dropout rate weighted according to where the students were enrolled. In the case of goal progress, an asterisk indicates significant departure from the all-freshman figure at the bottom. Where the residual selection rate is positive, it suggests some degree of preference in selection. It is the actual percentage of applicants accepted minus the acceptance rate that would be expected on the basis of HSR and SAT (see Chapter 6).

the midrange, where admission on the basis of academic measures was uncertain. Table 9.2 provides some validation for that preference. In particular, students with high ratings on these measures were noticeably more likely to be nominated by their peers for success in the freshman year.

As a class of measures, the various types of achievement in Table 9.2 were more strongly related to peer nominations than to the other college performance criteria. Three groups in particular—those high on follow-through, personal statement, and teacher ratings—were nominated by their peers at a rate about 50 percent higher than would be expected. Note also that these achievement measures were largely unrelated to self-ratings of goal progress, and that they have surprisingly little relation to attrition. Most of the achieving groups had relatively low attrition rates, but not significantly lower than the rates prevalent in the colleges they attended.

Background characteristics

Background measures vary considerably and certainly do not submit to generalization, but Table 9.3 does show several interesting results. One stark difference between Table 9.3 and Table 9.2 is the almost total lack of relationship between background characteristics and peer nominations. The only significant association, in fact, is the slightly lower nomination rate for local residents.

In most instances the attrition rate followed the expected rate fairly closely, with two clear exceptions. Almost twice as many minority students dropped out during their freshman year, compared with the expected rate. For alumni sibling, the actual attrition rate was almost half the expected rate. Neither result is surprising and may possibly reflect a common influence: the degree of perceived affiliation with the institution. The alumni sibling group contains many students who have a brother or sister on the same campus. On the other hand, it is well known that some minority students feel alienated on college campuses that are very different from their backgrounds.

Many groups in Table 9.3 earned freshman grade averages that, from a statistical standpoint, were significantly different from expectations. From a practical standpoint, these differences were mostly quite small. Minority students did, however, earn a freshman average some two tenths of a letter grade lower than predicted (−.22 for black students and −.15 for Hispanic students).

These data appear not consistent with some conventional wisdom. There is no evidence here that students from private schools do better

Table 9.3 Relationship of Background Characteristics to Four Criteria of Freshman Success

Characteristic	Residual Selection Rate	N	Four Criteria of College Success: Average Grade Predicted	Average Grade Actual	% Nominated for Achievement Predicted	% Nominated for Achievement Actual	Goal Progress: % Mainly Satisfied	% Dropout in First Year Expected	% Dropout in First Year Actual
Aid applicant									
Aided	1	1,251	2.78	2.75*	17	17	39	10	11
Not aided	1	587	2.80	2.74*	17	20	40	8	8
Sent work sample	3	494	2.78	2.83*	17	19	39	10	11
Age: 18+	2	726	2.58	2.58	14	16	42	11	10
Women	−2	2,186	2.78	2.83*	17	16	40	10	9
Minority	31	195	2.39	2.20*	11	10	36	8	15*
Disadvantaged	1	405	2.74	2.63*	17	14	39	10	13
Diversity state	4	436	2.69	2.67	16	17	38	10	10
Local resident	3	542	2.80	2.78	17	13*	43	12	13
Close-tie school	4	1,159	2.63	2.67*	15	16	42	10	7*
Private school	4	1,072	2.53	2.55	13	13	42	10	8*
Parent:									
Prominent	−1	409	2.75	2.81*	17	17	39	9	7
Highly educated	−1	1,124	2.75	2.80*	16	17	41	9	8
From selective college	1	1,654	2.68	2.70*	15	15	42	9	7*
Alumni	23	406	2.73	2.75	16	16	45	8	6
Sibling alumni	4	379	2.69	2.76*	16	18	42	10	6*
All freshmen			2.73	2.73	16	16	41	09	09

*An asterisk on actual figures indicates a significant ($p = .05$) departure from the predicted or expected value for that group. Predictions are based on HSR and SAT; expected dropout rate is the overall dropout rate weighted according to where the students were enrolled. In the case of goal progress, an asterisk indicates significant departure from the all-freshman figure at the bottom. Where the residual selection rate is positive, it suggests some degree of preference in selection. It is the actual percentage of applicants accepted minus the acceptance rate that would be expected on the basis of HSR and SAT (see Chapter 6).

or worse than expected. Students from affluent homes achieved higher than expected, but only slightly. Alumni children seemed to perform much the same as other students. The older students did not outperform their younger peers (but they are not really very much older). There is no evidence here that failure to receive requested aid had subsequent negative repercussions on performance, but perhaps those students willing to come without aid did not really need it badly. There was at least the familiar finding that women outperformed men (with FGPAs of 2.8 compared with 2.6).

In Table 9.2 there were some instances of correspondence between the residual selection rate and freshman performance. In the case of background characteristics there was almost no such correspondence. The two groups that received strong preference in admissions (minority students and alumni children) were not high achievers on any of these measures. It can be assumed, however, that the instances of preference in the selection process are based on institutional priorities specific to these groups.

Educational objectives

Table 9.4 includes three types of measures related to educational objectives: intended major, degree plans, and educational goals. This table does not include a residual selection rate for these groups because in the case of intended majors any preference would probably be specific to the individual institution, and information concerning educational goals was available only after matriculation.

In these data there are few, if any, clear differences in the freshman year achievement of students in different curriculum areas. There are some small differences in average academic ability and achievement according to intended major. It is difficult, however, to interpret the achievement of these groups because of the likely possibility of grading variations from one field to another. For example, intended physics majors may achieve below expectation because they take unusually tough courses. Also, important differences in achievement or dropout rate from major to major in different colleges may well be overlooked here. There are some signs of that in similar analyses undertaken for individual colleges, although the samples are often too small to be sure of results without repeating the analysis with another freshman class the following year.

Students with different intended majors differ very little on any of the three other performance criteria, but prelaw students appear to be nominated by their peers more often than are students in other majors. In general the groupings by intended major are not readily

Table 9.4 Relationship of Degree Plans and Educational Goals (Rated Very Important) to Four Criteria of Freshman Success

		Four Criteria of College Success						
		Average Grade		*% Nominated for Achievement*		*Goal Progress: % Mainly Satisfied*	*% Dropout in First Year*	
Plans and Goals	*N*	*Predicted*	*Actual*	*Predicted*	*Actual*		*Expected*	*Actual*
Intended major								
Arts and humanities	517	2.75	2.84*	17	18	42	9	10
Biological science	316	2.83	2.82	18	16	42	9	8
Business	496	2.65	2.66	15	14	45	11	9
Physical science	238	2.90	2.83*	20	16	41	8	7
Premedical	455	2.86	2.85	19	22	38	9	9
Prelaw	379	2.78	2.83*	17	22*	40	8	6
Social science	519	2.70	2.75*	16	16	40	9	8
Undecided	641	2.68	2.69	16	16	40	10	8*
Intended degree								
Bachelor's	801	2.70	2.69	16	11*	41	11	11
Master's	1,324	2.76	2.77	17	16	41	9	9
Doctorate	1,382	2.82	2.83	18	21*	40	9	7
Educational goals								
Liberal education	1,586	2.77	2.83*	17	20*	41	9	6*
Intellectual skills	2,178	2.75	2.78*	17	19*	41	9	8
Moral values	348	2.81	2.87*	18	21	38	9	10
Social awareness	417	2.73	2.78*	16	23*	37	10	9
Creative talents	897	2.75	2.78*	17	18	40	10	11

* An asterisk on actual figures indicates a significant ($p = .05$) departure from the predicted or expected value for that group. Predictions are based on HSR and SAT; expected dropout rate is the overall dropout rate weighted according to where the students were enrolled. In the case of goal progress, an asterisk indicates significant departure from the all-freshman figure at the bottom.

Table 9.4 Continued

Plans and Goals	N	Four Criteria of College Success: Average Grade Predicted	Average Grade Actual	% Nominated for Achievement Predicted	% Nominated for Achievement Actual	Goal Progress: % Mainly Satisfied	% Dropout in First Year Expected	% Dropout in First Year Actual
Educational goals (continued)								
Physical development	894	2.68	2.68	15	18	40	9	9
Leadership training	1,280	2.75	2.79*	17	20*	41	9	7*
Personal relations	673	2.71	2.72	16	14	39	12	8*
Social competence	1,657	2.74	2.75	16	18	41	9	8
Professional training	1,938	2.74	2.76	17	18	42	10	9
Practical skills	862	2.74	2.72	16	18	44	9	9
Career exploration	1,213	2.74	2.77*	16	15	40	9	8*
All freshmen		2.73	2.73	16	16	41	9	9

*An asterisk on actual figures indicates a significant ($p = .05$) departure from the predicted or expected value for that group. Predictions are based on HSR and SAT; expected dropout rate is the overall dropout rate weighted according to where the students were enrolled. In the case of goal progress, an asterisk indicates significant departure from the all-freshman figure at the bottom.

distinguishable on the basis of these criterion data, perhaps because many of these students have not yet made any commitment to a major.

Similarly, it is doubtful that many students know if they will eventually obtain a bachelor's, master's, or doctor's degree. Among college students nationally, degree aspiration is closely related to persistence (Astin 1976; Hilton 1981; Peng and Fetters 1978), but not in these nine colleges, at least not through the freshman year. There is, however, clear differentiation among the three degree aspiration groups with respect to the peer nomination criterion. Those aspiring to the doctorate are almost twice as likely to be viewed as successful as those aspiring to a bachelor's degree, and the differences are not attributable to level of academic ability.

The remainder of Table 9.4 characterizes the freshman year performance of those students who indicated at fall entry that various goals were very important. Generally, although there were not large differences in the performance of students who emphasized different goals, those students who stressed intellectual goals did tend to earn slightly better grades than expected and they were more likely to be nominated by their peers. Also, to a small extent, it appears that students who think their educational goals are very important— regardless of what those goals are—are somewhat less likely to drop out during the freshman year.

College ratings

Table 9.5 contains similar results for six measures, all of which represent some type of rating or judgment made by the college during the admissions process. One would certainly expect these ratings to have a special bearing on selection decisions, and the residual selection rates shown in Table 9.5 confirm that expectation.

Colleges may rate applicants high for a variety of reasons. It does not necessarily follow that high ratings in admissions will be reflected in high performance later. The three types of flags are a case in point. Although many students had talents, attributes, or other characteristics worth some preference in admissions, the students so flagged did not earn higher freshman grades than predicted, and there is little other evidence that they performed better than expected.

The students who received very high academic or personal ratings did earn slightly higher grades than expected, and they were substantially more likely to be nominated by peers for having a successful year. While the academic and personal ratings do not appear to add much to HSR and SAT in predicting grades, the stronger relationship to peer nomination suggests the possibility that these ratings may be more

Table 9.5 Relationship of High Ratings by Admissions Staff to Four Criteria of Freshman Success

College Rating	Residual Selection Rate	N	Four Criteria of College Success: Average Grade Predicted	Average Grade Actual	% Nominated for Achievement Predicted	% Nominated for Achievement Actual	Goal Progress: % Mainly Satisfied	% Dropout in First Year Expected	% Dropout in First Year Actual
Outstanding interview	21	472	2.85	2.88	18	23*	37	06	05
Overall ratings									
Academic (5)	8	428	3.15	3.22*	25	33*	36	08	06
Personal (5)	16	393	2.84	2.90*	18	27*	40	07	06
Any flag for:									
Special talent	8	1,346	2.73	2.74	16	20*	41	09	10
Unusual attribute	7	1,225	2.77	2.77	17	20*	37*	08	09
College interest	9	1,316	2.64	2.64	15	15	42	10	09
All freshmen			2.73	2.73	16	16	41	09	09

*An asterisk on actual figures indicates a significant ($p = .05$) departure from the predicted or expected value for that group. Predictions are based on HSR and SAT; expected dropout rate is the overall dropout rate weighted according to where the students were enrolled. In the case of goal progress, an asterisk indicates significant departure from the all-freshman figure at the bottom. Where the residual selection rate is positive, it suggests some degree of preference in selection. It is the actual percentage of applicants accepted minus the accept rate that would be expected on the basis of HSR and SAT (see Chapter 6).

helpful in forecasting broader criteria of college success in the senior year. An outstanding interview rating evidently had an even stronger influence on selection decisions than did an outstanding academic and personal rating (though interviews were typically available for fewer than half the applicants). The interview rating showed a generally similar but weaker pattern of validity compared with the academic and personal ratings. Whether or not those outstanding 17-year-old applicants look like outstanding seniors four years later remains to be seen.

A final observation is that admissions staff devote considerable time to talking with secondary school students to discern which applicants are likely to fit the institution; that is, which students are likely to find the institution to their liking, to find challenges as well as support, and to perceive the college as a good place to spend four formative years. The data in Table 9.5 attest to the difficulty of making such forecasts. As predictors of goal progress or attrition, these college ratings were no better than numerous other measures already examined.

FORECASTING SUCCESS

The preceding discussion focused on individual personal qualities and sought to clarify which measures tend to predict different types of performance and to what extent. It is now useful to focus on the four measures of freshman performance and ask to what extent and on what basis is each predictable.

Do personal qualities predict grades?

We have examined various personal qualities: accomplishments in high school, background characteristics, personal statements, references, and overall ratings of an applicant's promise. What does it all mean to the selection of students who can make good grades? When all these measures are taken into account, to what extent do personal qualities add to the accuracy of predicting freshman grade average? A number of multiple regression analyses were undertaken in the interest of clarifying these questions. Table 9.6 shows the results from several perspectives.

The first four lines of Table 9.6 show the cumulative validity of HSR and SAT as noted previously. The admissions test always added to HSR; sometimes slightly, sometimes substantially. On the average, validity increased from .41 to .51 when SAT was simply added with equal weight to HSR (line 3). Normally, colleges consider that one measure or the other is characteristically more valid at a given insti-

Table 9.6 Correlation of Freshman Grade Point Average with Various Combinations of Preadmissions Measures

Measures	College									Average
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL	
Number	649	374	363	383	687	455	635	766	381	
1. High school rank (HSR)	.39	.45	.45	.30	.56	.47	.25	.40	.46	.41
2. Admissions test (SAT)	.30	.46	.29	.52	.38	.61	.45	.37	.41	.42
3. Academic composite (HSR and SAT; equal weights)	.46	.55	.46	.52	.57	.64	.44	.47	.52	.51
4. Predicted grade (PG) (HSR and SAT)	.46	.55	.47	.55	.59	.65	.49	.48	.54	.53
5. Academic rating (AR)	.38	.57	.43	.43	.56	.59	.52	.28	.45	.47
6. PG and AR	.47	.59	.49	.55	.60	.66	.54	.48	.55	.55
Number	518	332	323	360	615	424	594	706	304	
7. Personal achievement composite (PAC) (7 measures, equal weights)	.19	.09	.05	.10	.13	.12	.21	.09	.20	.13
8. HSR and PAC	.43	.44	.46	.31	.58	.46	.31	.42	.50	.43
9. HSR and SAT	.44	.55	.47	.54	.60	.63	.48	.47	.58	.53
10. HSR, SAT, and PAC	.46	.56	.48	.55	.61	.64	.51	.48	.59	.54
Number	524	315	298	301	506	377	486	629	304	
11. HSR and SAT	.45	.55	.44	.50	.59	.61	.47	.46	.54	.51
12. HSR, SAT, and 23 achievement and background measures	.49	.58	.48	.55	.62	.65	.54	.49	.59	.55

See technical note 12.

tution. The predicted grade incorporates optimal weights; its validity is a bit higher, .53 on the average (line 4).

The validity of the academic composite can be contrasted with that of the personal achievement composite (PAC), a measure used in earlier analyses to represent those aspects of the student's record that suggest significant achievement in other than strictly academic areas. The personal achievement composite had generally low correlations with FGPA —in no case as high as either HSR or SAT (line 7). As these low correlations suggest, the personal achievement composite does not make a useful contribution to HSR and SAT in forecasting grades (line 10 compared with line 9).

It is also apparent that the personal achievement composite is a poor substitute for the SAT. Observers of college admissions have sometimes wondered whether such indicators of personal achievement might provide an alternative to admissions tests that would not exhibit the differences among ethnic groups that are usually found with standardized tests. Comparison of lines 8 and 9 indicates that the PAC adds relatively little to the HSR as compared to the SAT. Adding the SAT to HSR increased the validity from .42 to .53; adding instead the PAC to HSR increased validity from .42 to .43 (both comparisons based on the same group of students). When the seven component measures of PAC were weighted optimally, the average validity coefficient in line 8 was .45.

Clearly the PAC does not exhaust the possibilities of finding some other useful indicator of academic achievement in college. It does, however, provide a good indication of the promise of such measures because it includes special achievements usually considered first: outstanding extracurricular accomplishment (four types), evidence of achievement in employment, an impressive personal statement, and strong references from the secondary school. Of these seven measures, normally only the last two, the personal statement and the school report, made any significant contribution to HSR in predicting FGPA. These are the two measures most subject to manipulation and floating standards, respectively, should they become markedly more important in the decisions of selective institutions.

Are admissions officers able to make better estimates of academic performance than is provided by the predicted grade? Colleges consider various aspects of the student's record in assigning an academic rating of 1 to 5. Does this rating provide a more sensitive forecast, taking account not only of significant personal achievement, evidence of persistent effort, and so on, but also such matters as where the student went to school and how difficult his or her courses were? These data

indicate that in two colleges (Hartwick and Colgate) the academic rating (AR) was a little more valid than PG, but that was not the general pattern. The average validity of AR was .06 lower than PG (line 4 versus 5).

In all instances adding PG to AR (line 6) provides a more accurate estimate of freshman grades than did AR alone—often substantially more accurate. Conversely, AR typically did not (nor did any of the other ratings by admissions staff) add much to the validity of PG, although students with a very high academic rating tended to overachieve. To anyone who has examined the thousands of school records that flow through an admissions office, these results may seem somewhat surprising. They are not, however, inconsistent with what is often observed when holistic judgments of this type are pitted against objective scores of proven validity. Evidently, in attempting to improve on objective measures, expert raters often overcompensate for aspects of an applicant's record that merit only slight consideration, or they make spurious adjustments for other aspects that are actually not relevant to subsequent performance (see the discussion in Chapter 3). The result is frequently a rating less valid than the information on which it is largely based—in this case, HSR and SAT. See Dawes (1971), Dawes and Corrigan (1974), and Hoffman (1960) for exemplary research on this phenomenon. It should be noted, however, that the AR used in this analysis was often based on the judgment of only one reader in the admissions office. In forthcoming work we will investigate whether an AR based on collective judgment is more valid.

In the residual analyses described earlier, the data from many groups of students were examined for relationships between personal qualities and high grades in college. Tables 9.2 and 9.3 contain those background characteristics and achievements considered most relevant to admissions decisions. In those tables there are a number of instances of higher or lower achievement than expected—statistically significant but mostly small. What is the net affect of these small differences? If all such personal qualities were taken into account, by how much could the accuracy of grade prediction be improved?

The bottom line of Table 9.6 shows the results of including 25 achievement and background measures in one overall regression analysis. For individual colleges the increase in the multiple correlation, compared with that of HSR and SAT, ranges from .03 to .07. The average increment is .04, half of which results from adding 12 achievement measures and half from adding 11 background measures. Details of this analysis are shown in Appendix Table D.14.

Most of the 23 additional measures did not enhance the prediction of freshman grades. The achievement measures that made the most con-

sistent independent contribution beyond HSR and SAT were academic honors (usually a school prize or recognition in a test-based scholarship competition) and the personal statement (either for content or for quality of writing). Among the background characteristics, maleness and minority status tended to have negative weights; that is, these characteristics were associated with achieving grades below those expected on the basis of other measures. A few additional significant regression weights were scattered among different measures for different colleges.

While the .04 increase in multiple correlation is statistically significant, the practical impact is limited. A substantial portion of the potential increment is already realized through separate regression equations by sex, which are typically reported in validity studies, and through affirmative action admissions policies, which act in the opposite direction from the result that would be obtained by blindly including minority status in the computation of a slightly more valid predicted grade. There are also considerable practical difficulties and questions of institutional cost effectiveness in routinely coding and systematically analyzing diverse information about applicants only to gain a small improvement in prediction. A more serious difficulty is that some measures such as the personal statement may become compromised as soon as it is evident that they are receiving extra weight in selection decisions.

These results may appear somewhat disappointing, considering the extensive information included. Few, if any, multi-institutional studies have examined the predictive effectiveness of as many different types of objectives and subjective measures. On the other hand, these findings are not inconsistent with the research literature summarized in Chapter 3. In general, the history of admissions research since World War II shows an uncommonly extensive and largely fruitless effort to find other measures of student ability and experience that would add useful information to the traditional academic measures in predicting freshman grades. Other measures have shown promise, but it has been in predicting other outcomes of college. See Fishman and Pasanella (1960); Baird (1969*c*); Richards, Holland, and Lutz (1967); Wallach (1976); and Freeberg (1967). In consideration of that history, long-term follow-up and multiple criteria of success were included in this study.

The ubiquitous dropout problem

The dropout rate in the freshman year varied substantially at the nine colleges (3 percent to 18 percent). The overall rate of 10 percent, not high for colleges generally, matches, fairly closely, data reported elsewhere

for private four-year colleges (Peng and Fetters 1978; Lenning, Sauer, and Beal 1980). Since it can be assumed that more students will drop out later and that some of those presently classified as dropouts will later return, these results obviously deal with a limited interpretation of the persistence problem (see technical note 13).

The dropout rates differed for the various groups examined in Tables 9.2–9.5. The differences, however, were not large, particularly when expected attrition rates were adjusted to take into account the characteristic attrition rates in the particular colleges where different groups tended to enroll. The general impression of these results was not encouraging, but an additional analysis was undertaken to better evaluate how predictable freshman attrition is in the nine colleges and which measures tend to be independently associated with dropping out. For this purpose, 10 measures were selected that, from the results previously reported, appeared to have some promise of predicting attrition: three achievement measures, four background measures, and three indicators of educational goals. The results are shown in Table 9.7. As column 2 indicates, these 10 measures predicted dropouts only to the extent of a multiple correlation of .15. This figure matches almost exactly Peng and Fetters' (1978) estimate of the predictability of dropout in selective colleges. Within colleges the average figure is even lower (.08). In fact only two of nine multiple correlations for individual colleges were significantly different from zero. In the analysis of residual dropout rates within individual colleges, 6 percent of some 500 statistical tests were significant at the 5 percent level of significance—another convincing demonstration that within these individual institutions, dropouts were quite unpredictable even with the fairly extensive preadmission information available.

The fact that the largest regression weight in column 2 (.08 for the SAT) drops to near zero in column 1 suggests that much of what little prediction of attrition is possible when all institutions are lumped together may result mainly from the association demonstrated earlier between institutional selectivity and dropout rate (see Figure 9.2). To test that hypothesis, another multiple regression analysis was carried out with the addition of nine dummy variables, each representing attendance at one of the participating colleges. As indicated in column 3, the dummy variables improved prediction somewhat and accounted for most of the significant regression weights. In column 4, the multiple correlation goes down only slightly when institutional identity is considered alone with no information concerning the student's characteristics.

Certainly there is every indication in these results that persistence

Table 9.7 Prediction of Persistence on the Basis of Selected Measures Plus Knowledge of College Attended

	Average Coefficients for 9 Analyses Within Colleges	*All Colleges Combined*		
	1	*2*	*3*	*4*
Achievement				
High school rank	.01	.03	.02	
SAT	.02	.08*	.02	
Personal achievement composite	.04	.07*	.05*	
Background				
Minority	−.01	.01	−.01	
Alumni ties	.02	.03	.03	
Socioeconomic status	.03	.03	.03	
Close-tie school	.06	.06*	.04*	
Educational goals				
Liberal education	.04	.04*	.03	
Personal relations	.01	.01	.01	
Degree aspiration	.02	.01	.02	
College attended				
Richmond			−.04	−.07*
Hartwick			−.06*	−.08*
Kenyon			.05	.05
Occidental			−.04	−.04
Ohio Wesleyan			−.09*	−.12*
Williams			.04	.08†
Colgate			.11*	.13*
Bucknell			.08*	.09*
Kalamazoo			−.06*	−.06*
Multiple *R* (shrinkage)	.08	.15*	.19*	.18*

* $p = .05$. Positive coefficients indicate greater persistence, i.e., lower dropout.
† The analysis provided no significance test for the last college entered.

is remarkably unpredictable in the individual colleges. It may be that several characteristics in combination could be used to predict pockets of likely dropouts. For example, if bright women from New England tend to leave a Texas college, one might stretch to speculate that northern feminism does not mix well with a southern campus culture. But hypotheses of this type would typically account for a relatively small part of attrition, and sifting through such small pockets of students usually exposes many "findings" that don't hold up the next year.

For the students in this study it appears that the best way to predict likelihood of dropping out is to know what colleges they attend. A clear implication is that colleges of the type represented here might be well advised to devote more attention to understanding attrition as a reflec-

tion of the college experience rather than to expecting to improve persistence through more careful selection. Perhaps attrition can be traced in part to unsatisfactory progress that results from a poor fit between the student's goals and the college that he or she attends (see technical note 14).

Progress toward educational goals

Confidence that one is making reasonable progress toward important personal goals is a significant part of the educational process—an outcome to be valued in its own right apart from other desirable benefits of higher education. In the spring we obtained from the survey students a self-assessment of their progress toward the 12 goals previously described. A goal progress composite (GPC) was constructed from these self-assessments in an effort to create a single measure that would represent good or poor progress overall. This experimental score was used in the various residual analyses as an additional criterion—a view of performance rather different from that normally included in studies of the validity of selection measures.

One significant relationship was noted. Students who had been outstanding in high school were less likely to perceive themselves as making good progress in college than were students who had not done so well at the secondary level. For example, 34 percent of the students who had won important academic honors in high school were mainly satisfied with their progress in their freshman year; the corresponding figure was 48 percent for students who had ranked in the bottom half of their high school class. This difference seems to reflect the common observation that many college freshmen are quickly struck with the fact that competition is tough and it is harder to excel in college than in high school.

A more pervasive and compelling result, however, was that this measure of goal progress was otherwise unpredictable from students' personal qualities—their achievement record, their background characteristics, or their educational objectives. This lack of relationship, amply illustrated in Tables 9.2–9.5, obtained within individual colleges. There was a significant relationship between the GPC and the probability of dropping out (see Figure 8.6). The two measures were taken at about the same time, however, and it is not clear that such a measure of goal progress will predict dropouts in later years. These data suggest that the GPC has limited validity. The idea of representing personal development by an accumulation of positive and negative self-assessments of progress in different goal areas may not be particularly useful.

There is evidence, on the the other hand, that assessment of prog-

ress toward individual goals is a much more useful approach to understanding student development and institutional functioning. First, there was a pattern to freshman dissatisfaction. In analyzing more closely the relation between the GPC and persistence (as shown in Figure 8.6), it was clear that dropping out was much more associated with dissatisfaction in some goal areas than in others. Dropouts were approximately double the normal rate among those students who expressed dissatisfaction with progress in liberal education, physical development, leadership training, social competence, professional training, and career exploration.

Second, even though there was surprisingly little variation from college to college in the overall percentage of satisfied ratings of goals generally, there were significant and sometimes substantial differences across colleges in the extent to which students expressed satisfaction with progress toward particular goals (see Appendix Table D.13). Thus, the data indicate that some types of student dissatisfaction with progress are related to attrition more than are others and are more common on some campuses.

A third observation is that students' ratings of satisfaction with progress toward individual goals were to some extent predictable from personal qualities, even though the overall GPC was not. The multiple correlation of 23 preadmission measures with the GPC was not significantly different from zero. Despite the probable unreliability of individual goal satisfaction ratings, each could be predicted to a small but significant degree (the shrunken multiples ranged from .08 to .21). Various background and achievement measures had significant weights in predicting self-reported progress. The most consistently useful single measure was the student's rating in the fall of the goal's importance.

These results are generally consistent with the idea of "fit" in college admissions. The particular pattern of a student's educational objectives is important because attainment of those goals is, to some extent, predictable from what the student has previously accomplished and where the student goes to college. Thus, identifying educational outcomes that are related to those goals is an effective way to connect personal qualities in recruitment and selection with the educational process that follows. Such detailed analysis lies beyond the scope of this study, but should engage the interest of individual institutions. Questions such as the following seem important. In a given institution, is a particular pattern of goal dissatisfaction especially associated with attrition? Are students in different degree programs more prone to unsatisfactory progress in particular goal areas? To assess progress toward goals, are there more reliable and objective ways that might usefully supplement self-reports from students?

Peer judgment – An alternative view of success

Peer nominations represent a different type of criterion based on a different rationale from those previously discussed. Student judgment of who is successful is best perceived as an intermediate criterion – a measure that may provide an early surrogate for a broad-based faculty judgment of which students have had a successful four years. In the spring students were asked to identify "one or two students who entered with you who you believe have been particularly successful in college already. They may have shown signs of leadership, personal or intellectual development, some unusual accomplishment, or whatever strikes you as significant."

Those students nominated at least twice form the criterion group. The measure is undoubtedly not very reliable, but may provide an indication of later faculty judgment. In the wording of the instructions, students were encouraged to view success broadly. It is reasonable to assume that faculty will be so inclined in assessing these students' achievements after four years. Past research strongly supports this assumption. See Anastasi, Meade, and Schneiders (1960); Taber and Hackman (1976). The peer nomination criterion has the added advantage of being available early because students tend to become known to their peers more quickly than to the faculty.

In the residual analyses previously described, several measures that had a fairly strong association with peer nomination were follow-through, work experience, personal statement, and degree aspiration. In addition, four types of ratings effectively predicted peer nomination: teacher reference, interview rating, and academic and personal ratings made by the college.

These measures suggest a pattern that characterizes students judged successful by their peers. In addition to being good students (which was established earlier), they are hardworking, well-organized achievers in other areas as well. It is also clear that these students have personal qualities and presence that impress others. All the subjective ratings of students tended to identify more nominated students than could be explained on the basis of their academic credentials.

It is equally noteworthy that socioeconomic level and background factors in general had almost no relation to the peer nomination criterion. Evidently, when students make judgments about their peers, they attend to the individual qualities and achievements of those students and are relatively blind to the accidents of background and personal circumstance. This is not to say, of course, that those judgments may not be strongly biased in favor of the attractive member of the opposite sex, the agreeable personality, or other traits that have no intrinsic validity in defining college success.

Table 9.8 Relative Weight of Personal and Academic Measures in Predicting Two Types of Success

	Dean's List[a] (21%)	*Peer Nomination*[b] (16%)
Standard weights		
Academic composite	.40	.17
Personal achievement composite	.05	.10
Multiple *R*	.40	.21
Standard weights		
Academic rating	.38	.13
Personal rating	.02	.11
Multiple *R*	.38	.20

a. FGPA of 3.3 or higher.
b. Nominated at least twice.

Table 9.8 provides an overview of the extent to which academic and personal factors predict peer nomination. As the top portion of the table indicates, the personal achievement composite makes no significant contribution to predicting who will make the dean's list, but it is significantly related to peer nomination. Similarly, the overall personal rating assigned by the admissions staff makes no contribution to identifying students on the dean's list, but in the identification of students on the peer list, the personal rating and the academic rating had almost equal weights. These results clearly indicate that success in the eyes of freshmen depends on personal qualities as well as academic competence. This finding in itself does not argue for more emphasis on nonacademic personal qualities in admissions. Such a conclusion must await confirmation based on the outcomes of four years of college work and the considered judgment of the faculty and staff of the institution.

10

Summary of Major Findings

The results of the Personal Qualities Project indicate that, in large part, admission to the nine participating colleges proceeds in a quite reasonable manner. While the colleges and their situations vary, all give major attention to academic achievement and most give significant attention to personal qualities. There is, however, considerable room for improvement, and colleges can better serve student and institutional interests by paying more attention to personal as well as academic credentials.

Colleges need to work on this problem in several ways. Selective institutions can make better use of personal qualities to broaden the talent pool. They intend to do so, but evidently need more effective means of ensuring that their admissions practices match their policy intentions. For all colleges—either more or less selective—with a somewhat mobile student body, it is apparent that student self-selection has a great influence on the applicant pool and the eventual student body. For that reason, imaginative recruitment has even greater potential for shaping the institution than is commonly realized—often greater, we suspect, than the selection process.

Recruitment—no matter how imaginative—works in the long run only if the past achievements and future goals of the recruited students fit reasonably well with what the college has to offer. Achieving this fit should be a major recruitment goal. But for any college, whether its applicants come from a national pool or largely from the local area,

the greatest challenge is more effective use of personal qualities to enhance student development after admission.

These are general impressions of the study to date. The final section of this overview returns to these impressions with specific implications and recommendations. The following section reviews the most important results of the study.

THE FINDINGS

Analysis of the application, selection, enrollment, and performance of these students through the first year was reported in Chapters 5–9. The results can be summarized under five general questions.

What personal qualities characterized the applicants, and how were they rated in the admissions office? Although some colleges had far more academically outstanding applicants than did others, every college had among its applicants a substantial number with noteworthy records of personal achievement. Consequently, the talent pool for each college was extensive if the college was willing to consider, in addition to academic measures, areas of personal achievement such as leadership, athletics, community service, and creative endeavors (e.g., art, music, drama, writing).

The colleges assigned each applicant an overall academic rating and a personal rating, each on a five-point scale. Although the ratings were based on all the information in the applicant's folder, the former gave heavy emphasis to school rank and test scores; the latter gave some emphasis to academic factors but more to personal achievement in secondary school.

In addition, colleges flagged any applicant who showed special talent, had unusual attributes, or was of particular interest to the institution. The special talent flag was most closely associated with a research staff rating called follow-through, persistent achievement over time in more than one area of accomplishment. Applicants who were thought to have unusual personal attributes were most often minority students or students with high interview ratings or outstanding school references. The college interest flag was most often associated with geographic diversity or alumni ties.

There were substantial variations from college to college in the way ratings were used by admissions staffs—differences in the rating scales, their evident meaning, and their bearing on the admissions process. Consequently, the data analysis was based not only on the ratings but also on independently derived information and project

staff ratings especially designed to be comparable from college to college.

To what extent were personal and academic factors important in the admissions decision? The nine colleges varied not only in the academic ability of their applicants but also in the proportion of applicants accepted (from 22 percent to 93 percent). As a result, the critical level of academic ability at which the odds of admission were fifty-fifty differed widely from college to college—almost five standard deviations on a composite academic measure. Dramatic differences were underscored by this fact: at two institutions the likelihood of admission was either poor or uncertain for 19 of 20 applicants; at two other institutions the likelihood of admission was poor or uncertain for less than 1 of 10 applicants. These institutional differences are all the more remarkable because the average applicant to each of the nine colleges had test scores well above the national average of all SAT takers.

In selecting their students, all the colleges placed primary emphasis on academic factors. In general agreement with their stated policy intention, the colleges' academic ratings of the applicant folders received about three times as much weight as did the personal ratings. The two main academic factors—high school rank and test scores—were weighted about equally. These two measures predicted admissions decisions fairly well, but it was evident that other measures also came into play. When other personal qualities were included, the prediction of admissions decisions typically improved substantially. Furthermore, we found no indication that any of these nine colleges used a cutoff score for academic measures.

In order to examine the effect of personal qualities on selection decisions, residual selection rates were computed for a number of different characteristics (i.e., the actual selection rate for a particular type of student minus the selection rate that would be expected on the basis of the high school rank and test scores). Analyses of residual selection rates revealed the following.

- At the most selective institutions, many characteristics had positive residual selection rates, indicating that personal qualities played a heavy preferential role in selection decisions. At colleges that turned down fewer applicants, there was much less preferential selection based on personal qualities. In general, more positive residual selection rates were associated with background characteristics (such as minority or alumni status) than with nonacademic achievements in secondary school (such as leadership or creative accomplishments).

- Strong affirmative action programs in these institutions were confirmed by the fact that, on the average, minority status had the largest residual selection rate of any characteristic. Other background characteristics with positive residuals denoted some degree of college affiliation (alumni children, siblings enrolled at the institution, or local residents). Geographic diversity also played a preferential but limited role, as did close college ties with secondary schools.
- Private selective colleges are assumed by some to be bastions of social elitism. Undoubtedly there are some individual cases where the son or daughter of a well-known or quite wealthy parent has an extra edge in admissions, but the more important question is whether or not, overall, socially or economically privileged groups receive preference in selection decisions. In these colleges they did not. Sons and daughters of parents who hold prominent positions, are highly educated, or themselves attended selective colleges were overrepresented in the applicant pools, but our data indicate that these applicants had no advantage in admissions decisions. Furthermore, admissions decisions were evidently not influenced by whether or not the student applied for financial aid.
- In the course of selecting highly able applicants, these colleges enrolled many students with unusual personal achievements. However, it is widely assumed that, other things being equal, students can enhance their chances of admission to a selective institution through noteworthy extracurricular accomplishment. The data offer little support for that assumption. There was some evidence of advantage in admissions for students with unusual accomplishment beyond the classroom, but only to a limited degree and for relatively few applicants.
- Applications flagged by the admissions staff were more often given preference in selection decisions than were groups defined by background characteristics or by high marks on independent project staff ratings, probably because selection decisions and admissions staff judgments of outstanding qualities are typically not arrived at independently.
- Coming to the campus for an interview did not, in itself, have any bearing on selection decisions, but in some colleges those applicants whose interview protocols were judged outstanding were clearly more likely to be accepted than their academic credentials would indicate. High interview ratings were evidently only partly attributable to some special characteristic or accomplishment; it is not clear to what extent the association between interview ratings and admission decisions was due to favorable impressions of the students or confoundment of interview ratings with admissions decisions.

Similar residual analyses were undertaken in three selection zones where, on the basis of academic measures, the likelihood of admission to a given college was high, uncertain, or low. This analysis confirmed that the nature of the admissions process is quite different in those three zones and quite different among colleges where most applicants are in high or low zones. In the high selection zones there was no evidence that preferential admissions are linked to personal qualities. In the low zones, where selection is uncertain or unlikely on the basis of academic measures, the residual selection rates indicated that preferential admissions are based on personal qualities. The residual pattern suggests that background characteristics (alumni ties or minority status) may be the basis of affirmative admissions decisions for students whose academic credentials place them in either the uncertain or the low selection zones. Evidence of personal achievement (creative accomplishments or outstanding school references) appears to be used mainly as a tie breaker in the middle zone, probably late in the admissions cycle.

When residual selection rates for particular measures were compared with a college's stated admissions policy, it was apparent that admissions practices frequently did not correspond with an institution's policy intentions. Colleges typically gave less weight to personal achievement measures than their policy statements would indicate, and there was no apparent association between the amount of weight intended for a particular measure and the degree to which it affected actual selection decisions. Institutional policy on background characteristics typically stated, before the fact, a strong preference for students for whom there was also evidence of strong preference in actual decisions (e.g., minority students or alumni children). On the other hand, a policy statement of preference was not necessarily reflected in actual decisions.

In what ways did student self-selection determine who applied to and enrolled in which college? The first step in self-selection is the student's decision to apply to a particular college. The applicant pools of the nine colleges included a substantially larger proportion of high-ability students and students from upper income families than do the pools of four-year colleges generally. A discriminant analysis indicated that three factors had large roles in determining which applicant applied to which college: academic performance, geographic mobility, and financial need.

We expected to find that applicant pools would be characterized, at least to some extent, by recognizably different personal orientations, such as different patterns of personal achievement in secondary school.

The failure to find such patterns may have been because applicant pools to various colleges are less differentiated than are the freshmen enrolled in those colleges. A more likely explanation is that sufficient measures of personal orientation were not available to the project prior to admission, and therefore those patterns could not be established.

The second step in self-selection is the student's decision to enroll in a particular institution. Five variables were significant in those decisions: high school rank, test scores (high-ability students being less likely to enroll), having come for an interview, being a local resident, or having alumni ties. These five measures were used to estimate residual yield rates for other groups.

As compared with yield rates that would be predicted from these five measures, we obtained the following results (with college to college variations): students receiving aid were more likely to enroll, minority students were less likely to enroll, and graduates of private schools were also less likely to enroll (possibly because the latter group are more likely to file multiple applications). Although samples for this analysis were small, enrollment decisions were also associated, to some extent, with intended major and the orientation reflected in the student's personal statement (i.e., intellectual, personal, or career orientation). Subsequent analysis of freshman classes showed more clearly that student orientation varies among these colleges. Finally, there were numerous differences in the enrollment rate for applicants from different states (typically a point of special emphasis in market analyses).

How did the characteristics and experiences of the freshman classes differ from college to college? Overall, the profile of personal characteristics for 5,000 entering freshmen was strikingly similar to the profile for 25,000 applicants. It appears that the personal qualities of the freshmen who matriculate at these institutions are determined, to a considerable extent, by the self-selection process that creates the original applicant pool.

Students cited various reasons for choosing the college they entered; the reasons differed significantly from college to college. Many freshmen considered several goals (intellectual, career, and personal) very important in their college education. There were significant differences from college to college in the importance freshmen attached to these goals, particularly intellectual goals (obtaining a liberal education, exploring moral values, developing creative talents).

The nine freshman classes varied far more on academic achievement than on other measures of personal achievement – confirming that

self-selection and institutional selection primarily reflect stratification on academic achievement. A factorial analysis indicated, however, that independent of academic achievement, differences were clearly discernible in such personal orientations as intellectual and practical goals, creative and athletic skills, and social and leadership interests.

In the spring of the first year, freshmen were satisfied more often than not with their progress toward educational goals, although there were significant differences from college to college with respect to particular goals. Two areas were a frequent source of disappointment. Many students who entered college feeling that the development of intellectual skills and the exploration of career options were very important educational goals completed their freshman year dissatisfied with their progress in those areas.

In these institutions the freshman grade average was about 2.7, and relatively few students were in academic jeopardy. Typical of private selective colleges, the attrition rate was not large in the freshman year, although it did vary substantially from college to college (3 percent to 18 percent). For most freshmen, dropping out was associated not with their level of academic performance, but to some extent with their perception of progress toward personal goals.

How were personal qualities related to success and persistence? Four criteria were used to evaluate performance during the freshman year: (1) freshman grade point average, (2) dropout (failure to persist to the sophomore year), (3) self-ratings indicating that the student was mainly satisfied with progress toward educational goals, (4) nomination by peers for having been "particularly successful in college already" (personal or intellectual development). The first issue was whether or not personal qualities are useful beyond high school rank and test scores in predicting which students are likely to do well on these criteria. A residual analysis similar to the one at the point of selection gave the following results.

- Measures of personal achievement in secondary school were only slightly associated with higher college grades than would be expected from rank and test scores. Typically, the personal measures were better predictors of peer nominations. Two measures that seemed to hold promise were quality of writing on the personal statement and follow-through in personal accomplishments.
- Several background characteristics had small but statistically significant associations with residual grade achievement (minority students earned somewhat lower grades and women somewhat higher grades

than would be expected from HSR and SAT). Students' judgments of their peers' success in college were evidently not influenced by background characteristics.

- There was little correspondence between residual selection rates (preference in admissions) and residual achievement in the freshman year (better performance on the four criteria than would be expected from traditional academic predictors).
- Students who emphasized intellectual goals did tend to overachieve slightly, but generally student goals were not associated with important differences in performance.
- Freshmen who had received very high ratings as applicants (in overall academic or personal ratings, in interviews, or through flags on the application) were often given substantial preference in admissions. Students so identified were not more likely to overachieve in academic work, to judge their progress satisfactory at the end of their freshman year, or to persist to the sophomore year. High ratings by admissions staff were consistently related, however, to the peer nomination criterion.

Focusing on the four criteria rather than on personal qualities resulted in these findings.

Predicting freshman grades. The validity of HSR and SAT in predicting freshman grades in the survey colleges was comparable to recent compilations of validity studies ($R = .53$). Despite variations from college to college, the overall validity of HSR and SAT was about equal and corresponded quite closely to their relative weight in selection decisions. Personal achievement measures were neither a useful substitute for, nor a supplement to, HSR and SAT in predicting grades. Adding 23 personal qualities to HSR and SAT did not result in a practical improvement in prediction of the freshman average. The colleges' overall academic rating, based on all information in each applicant's folder, was typically not as good a predictor of academic performance as was a simple composite of HSR and SAT.

Predicting dropouts. Substantial differences in the persistence rate from college to college were strongly associated with differences in average academic ability across colleges. Although this circumstance gave the appearance of a relationship between academic ability and persistence, within individual colleges persistence to the sophomore year was only slightly related to freshman academic performance and

was remarkably unpredictable on the basis of any preadmission measure. The best way to predict the likelihood of dropping out was to know where the student enrolled. This left a curious chicken-and-egg problem: Do some colleges attract students who are likely to persist, or do some colleges provide superior educational programs and support systems that encourage persistence, or possibly both?

Predicting progress toward goals. Preadmission measures did not differentiate which students were likely to be generally satisfied with their progress toward educational goals in the spring of their freshman year. For specific goals, however, satisfaction with progress was predictable to some degree, and there were significant differences from college to college in the extent to which students were satisfied with their progress in different areas. Furthermore, some types of dissatisfaction were related to dropping out more than were others. In particular, students who were dissatisfied with their progress in social competence, career exploration, professional training, or liberal education were twice as likely to withdraw as were students who were satisfied in those areas.

Predicting peer nominations. Peer nomination of successful students was intended to be broadly based; it was predictable from a pattern of earlier achievements clearly different from those measures that predict grades. The freshman nominees were good students, but they were hardworking, well-organized achievers in other areas as well. Furthermore, the personal rating by the admissions staff contributed substantially to the prediction of who would be nominated, but not who would make the dean's list. Students were apparently considering personal qualities when they identified successful freshmen, as did the admissions staff when they identified promising applicants.

IMPLICATIONS AND RECOMMENDATIONS

Broader implications of this study can be brought into focus by offering some concrete recommendations based partly on the results described above. We wish to emphasize that these recommendations are also based on personal impressions.

The results of this study seem largely consistent with prior assumptions about the nature of college admissions. The findings also provide a reasonably optimistic view of the usefulness of personal qualities in that process. Personal qualities are often considered elusive,

and it is certainly true that each college applicant is an individual with his or her own peculiarities as well as admirable traits. Not only the results of the analysis, but also the experience of working with thousands of applicant folders, support our belief that such qualities can be assessed – if the time and effort are taken to do so and if reasonable safeguards are observed.

Consideration of personal qualities helps illuminate the admissions process and its variations from college to college, according to institutional practices as well as circumstances. Some personal qualities are associated with success in the freshman year, some have intrinsic merit, and some are demonstrably related to important institutional objectives. Our data confirm both the importance of traditional measures of academic competence and the important supplementary role of personal qualities. Our assessment is therefore largely positive regarding the possibility and the benefits of greater use of personal qualities in admissions. Because there are complexities that must be kept foremost in mind and caveats that condition conclusions we might otherwise be tempted to draw too quickly, an analysis of the role of personal qualities in admissions is fraught with hazards.

Certainly, one potential problem in placing emphasis on personal qualities is the exaggerated consumerism so well described recently by David Riesman (1980) and Stephen Bailey (1980). In a rush to meet a demographic shortfall of students, there is the real danger of downgrading educational values in favor of superficial, momentary student interests. Some fear that greater attention to career relevance and the enhancement of nonacademic functions lead inevitably to trivialized learning. In this view, giving serious attention to the college students' personal qualities sounds suspiciously like a step in the wrong direction.

There may be equal danger in a rigid, narrow view of education. If college is to be a socializing and maturing experience, for many students the specifics of courses taken and grades earned are less important than the habits and attitudes acquired and the intellectual and personal skills attained. As we have argued in Chapter 2, the admissions process must take account of many factors vital to the health and effectiveness of the college. From either point of view – the student's or the institution's – it is hard to argue either for practical or idealistic reasons that admissions should rest exclusively on academic considerations. Because personal qualities are of little help in predicting freshman grades does not mean that those qualities are not relevant to other forms of success important to students and colleges. In thinking about these issues it seems particularly important to look for ways in which

institutions can emphasize a broad view of excellence in the way they select freshmen, design programs, and place demands on students.

Another important issue is the style and method of assessment. The danger lies in letting either objectivity or humanism get out of hand. The more objective forms of assessment (rank in class, test scores, clearly defined performance standards, and so forth) have important advantages in specificity and fairness. On the other hand, many argue for a more subjective form of assessment on the humanistic grounds that individuals are complex and no objective procedures can anticipate all patterns or considerations that may be critical in individual cases. Both points of view have merit. It is easy to agree that selection decisions should not be based solely on personal hunches or arbitrary cutoffs. The difficulty comes in knowing how to make sound judgments without the capriciousness inherent in exaggerated objectivity or subjectivity.

In evaluating the results of this study, remember that there are two basically different methods for justifying and validating measures used in recruitment and selection. One approach is to look for characteristics that help identify students who are likely to perform better in some sense. Such measures are validated through prediction studies such as those reported here. Another approach is to admit students who, in the judgment of the college and its faculty, best fit the institution's objectives (e.g., ethnic diversity in the student body, effective ties with constituents, or strength in a particular program area). Such objectives have intrinsic value for the institution and society. The use of admissions measures to foster them is validated through consensual policy formation. Although a measure's failure to forecast any important success in the freshman or senior year does not necessarily mean that its use in admissions is inappropriate, there is an implied need to justify that use on other grounds important to the institution.

Finally, there is always the danger of overgeneralizing research results and reaching premature solutions. Although the nine colleges in this study are not unrepresentative of selective private colleges, they are certainly not a cross section of higher education. An important finding of the study is that results vary from college to college. The character of that variation, the method of the study, and the implications for better use of information in admissions can be generalized. The data reported here are based only on the first-year follow-up. Important questions concerning fairness and reliability in the assessment of personal qualities are yet to be addressed. With this in mind, consider the general outcome and import of the study from the following four points of view, which we see as needs.

Improving the salience of personal qualities

We have emphasized that colleges have many different admissions objectives. For that reason, it is important to maintain an effective balance among admissions measures that have different strengths and weaknesses. Consider these five types of measures:

1. The high school record is highly pertinent because it reflects directly the same type of achievement as required in college, but an element of uncertainty and unfairness is involved in comparing records that are often not comparable.
2. The admissions test provides an objective, common measure of academic ability that has general relevance to a wide variety of intellectual tasks, but it represents a limited type of ability and may underestimate the capability of some students.
3. Personal experiences and accomplishments often represent real life competence and reflect successful effort that deserves reward, but they may be difficult to assess fairly and may not be directly relevant to educational objectives.
4. Background characteristics may be helpful in admitting students who serve institutional objectives, but they may be irrelevant to other important institutional objectives or otherwise unfair as a basis of preferential treatment.
5. Student interests and goals are especially relevant to effective recruiting and student development, but they may prove capricious and weaken educational programs if overemphasized.

How much weight does each type of measure deserve in recruitment effort and selection decisions? The answer depends on how valid each is, but they are not validated on the same basis. Forecasting success validates 1 and 2; consensus regarding institutional objectives largely validates 4 and 5; either rationale may validate 3. The five measures often represent somewhat different values; the difficult task is to keep them in balance.

The fact that personal accomplishment received limited weight in the selection decisions of these colleges seems serious beyond the mere failure to value extracurricular activities. Significant accomplishment of any sort typically involves organization, persistent effort, and personal commitment, in addition to talent. These are qualities that deserve reward, much like the strong academic message that colleges presently send to young students through their emphasis on school rank and test scores. It is the stated intention of these colleges to give recognition in admissions to unusual accomplishments. The limited weight on accomplishments is partly due, we suspect, to the lack of

salience such measures have in the applicant's folder. Rank and test scores stand out; other significant qualities typically do not have the same prominence.

Improving the salience of such characteristics in admissions requires several steps. Colleges need to document clearly which qualities are desired; give the qualities sufficient prominence in the admissions process; assess the qualities in a reliable manner so that they actually get fair weight in recruitment and selection. To improve the salience of personal qualities in admissions, we offer the following recommendations.

1. Colleges should systematically examine and clarify their policies on how much weight different qualities should have in recruitment and selection, and how those policies are justified and validated.

2. Any personal quality considered important in admissions should be stated so that its priority and character are apparent to applicants as well as college staff. Application forms and questionnaires like the Common Application form and the College Board's Student Descriptive Questionnaire should be modified as necessary to encourage emphasis on important personal qualities.

3. Colleges and testing agencies should place more emphasis on follow-through in student accomplishments: in the way admissions policy is described, in the way information is solicited from students, and in the way selection decisions are reached. Persistent, successful effort has intrinsic merit in its own right.

4. Students' personal statements deserve particular attention. If requests for statements were given a clearer substantive focus than is typically the case, the information might be more useful, the solicitation might better serve the recruitment efforts of the college, and this sample of student writing might prove more amenable to reliable evaluation. For example, the applicant could be asked, "Describe your main goals in college and how these goals are related to your previous accomplishments, employment, or personal experience."

5. There should be continuing research to improve the assessment of personal qualities and how they are judged by schools and colleges in day-to-day admissions work. At present, evaluations of test scores and grades far outweigh comparable studies of other qualities.

Recruitment as an instrument of institutional policy

Colleges rightly devote careful attention to choosing students who can handle the academic curriculum without undue difficulty. But how much influence does selection actually have in determining the character of the student body? For some colleges, selection is important; for many, recruitment is far more determinative. Our data indicate

that, typically, the freshman class is quite similar to the applicant pool. The applicant pool, in turn, is largely shaped by student self-selection.

Colleges appreciate the importance of understanding the dynamics of that self-selection, but most current marketing efforts do not go much beyond the essential enrollment maintenance. Even where students are in short supply, creative recruitment has considerable potential for shaping the student body. There is leverage in recruitment. As our data indicate, many talented students are not actively sought because their traditional academic credentials are not in the high range. There is also much diversity in what students want from college. Clear signals from the college about the qualities it seeks and the specific goals it emphasizes can influence the applicant pool. In contrast, selection decisions offer little purchase on the problem if the limited rejections a college can afford must be spent on those students who clearly cannot meet the academic standards of the faculty.

A creative recruitment effort not only should capitalize on strong programs and other assets of a college, but should engage the faculty in strategies for adapting and improving programs and services. Effective connections between recruitment and the educational program are difficult to achieve and require initiative at the highest administrative levels. If the connections work, they stand to improve the fit between student and college and the value of the educational experience.

Fit is uncommonly complex and has a long history (Pace 1960; Astin and Holland 1961; Stern 1970). What evidence does this study offer that the effectiveness of student–institutional fit can be improved? We have seen that from college to college, the freshman classes differ in their orientations, their reasons for choosing their colleges, and the goals they consider important. Furthermore, the pattern of satisfaction with choice and satisfaction with progress varies from college to college. These results suggest there is room for improvement through more attention to students' personal goals and whether or not those goals are mediated effectively through college programs and services. In the 1980s, recruitment seems much more likely to be helpful in achieving such objectives than does selection. Accordingly, we recommend the following.

6. Colleges should view recruitment as a primary means of shaping the institution directly. In addition to its vital role in maintaining an applicant pool, recruitment should focus on attracting those types of students who achieve most from an institution's programs and also help the institution meet its own objectives.

7. Colleges should examine the diverse talents and goals of the students in their applicant pools. They should seriously entertain the

possibility of identifying new student interest and achievement patterns that are consistent with institutional strengths and might deserve special priority in recruitment.

8. Colleges should routinely study the educational experience, with emphasis on achieving a better understanding of diverse student accomplishments and reactions to college. Alleviation of any endemic problems on campus appears to be a more direct route to reducing dropouts than are changes in recruitment and selection.

Better management tools in carrying out policy

One of the useful outcomes of this study is the demonstration of how difficult it is for an institution to know whether or not it is actually maintaining the balance it wants in carrying out admissions policy. Our results show frequent misfits between policy intention and actual practice in selecting applicants. There is also an evident need for improved means of tracking yield. Colleges should have a ready way of knowing whether or not applicants favored for academic reasons really do later demonstrate superior performance. These three problems have important similarities. In each case the need is for information that reflects accurately the results of admissions practices and provides some basis for corrective action. Overall academic and personal ratings provide one means of monitoring practices. The residual model used throughout this study also seems potentially useful as a management device. Thus, we make the following recommendations.

9. Colleges that emphasize personal qualities in recruitment and selection could help achieve the balanced emphasis they wish by giving each applicant an overall five-point academic and personal rating. A statistically derived score is likely to prove the fairest and most useful academic rating. Personal ratings are probably best based on an overall subjective judgment that takes into account the institution's objectives and the candidate's qualities. The college should evaluate such ratings periodically to ensure that they are done in a fair and consistent manner and reflect those qualities considered most important.

10. Each year colleges should summarize the outcome of admissions decisions to determine what percent of applicants were accepted within each combination of academic and personal ratings. These results should be routinely evaluated to see if emphasis placed on these two factors adequately reflects admissions policy.

11. As a further means of implementing institutional policy, colleges should use wherever possible (1) residual selection rates to monitor specific aspects of selection policy, (2) residual yield rates to improve the effectiveness of recruitment efforts, and (3) evidence of re-

sidual performance (actual minus predicted grades) to help monitor the outcome of selection decisions. The College Board and Educational Testing Service should provide information through existing services that will facilitate such management applications.

The developmental function in admissions

In Chapter 2 we distinguished a developmental model of admissions as opposed to the more familiar predictive model. The main purpose of a developmental model is to provide a better strategy for attracting and effectively serving students with diverse talents, preparation, and goals. The traditional predictive model assumes heavy emphasis on academic ability and selection, while a developmental model makes the following assumptions.

- Recruitment, selection, and retention are parts of a single sorting process that eventually defines the student body and much of the institution's character.
- Traditional academic measures provide a basis for describing the applicant's preparation and defining who is admissible; student characteristics, accomplishments, and goals provide an added basis for targeted recruiting.
- It is desirable to adjust both admissions policy and educational programs in a coordinated manner in order to serve the objectives of the college and to facilitate the academic and personal development of students.

Insofar as the data of this study are relevant, they support the reasonableness of the developmental model. Also, this model helps to integrate the previous observations and recommendations. As the foregoing discussion indicates, for most of the colleges recruitment is more determinative of the student body than is selection; students react differently to the educational experience in different colleges; early dropout is as much or more a function of those reactions as of academic performance. But what steps might be helpful in moving toward a more developmental emphasis in admissions? The question implies a large undertaking, but at least some elements of strategy can be suggested. We recommend the following.

12. Implementing a developmental model of admissions should include at least these steps:

- Define those aspects of academic preparation and those personal qualities (especially experiences, accomplishments, and goals) that

are particularly relevant to important institutional objectives in educational development. These developmental objectives might center in existing departments or cut across degree programs (e.g., artistic expression, communication skills, moral development, physical well-being, leadership, and so forth).

- Select key areas of educational development that deserve special emphasis because of their importance or their bearing on the strengths and objectives of the college.
- Develop guidelines for admissibility on the basis of preparation and ability.
- Devise specific procedures for giving priority to key areas of educational development in institutional positioning, recruiting, selection, program development, student guidance, and outcome evaluation.

13. Academic and personal growth should not be artificially separated. Although we have given limited attention to curriculum and the nature of academic preparation, emphasis on student development must certainly include enhancement of knowledge and competence in core subjects. In addition, students in this study indicated low satisfaction with their progress toward two goals that many students considered very important: the development of intellectual skills and the clarification of career interests and opportunities. These areas of educational development deserve special attention.

PERSONAL QUALITIES AND ADMISSIONS IN THE 1980s

In Chapter 2 we outlined three broad trends – demographic, social, and legal – that are having, and promise to have, an important influence on college admissions. Each of these trends suggested that personal qualities are likely to play a larger role in college admissions over the next decade or so. In that sense, these changing conditions in admissions provided an important rationale for this study. It is fitting to close with a brief second look at the three trends and to ask whether or not the data have spoken usefully to them.

First, we argued that the demographic downturn in high school graduates calls for more attention to personal qualities, because in a diminishing market not all colleges can focus exclusively on academic competence as a basis for recruiting. The foregoing comments on strengthening recruitment speak to this issue. Second, we urged that social trends require greater attention to personal qualities because of the need to serve the interests and goals of a more diverse student body. The discussion of the development function in admissions reinforces

that view. Third, we interpreted legal trends to suggest the need for more attention to personal qualities because of judicial endorsement of multiple measures in admissions and the need for institutions to demonstrate their validity. Discussion of the need for improved management tools bears especially on this concern.

In each case it is our impression that the data from these nine colleges have spoken usefully to these trends. Our continuing purpose in this study is to help strengthen the use of personal qualities by contributing to a better understanding of their validity and their function in admissions and by examining ways in which colleges might improve their assessment. This volume reports on the first phase of this work; Phase II will give more attention to assessment problems and to the achievements of the students in their four years of college. While substantial, this project represents a small part of the collective effort needed. The much larger task must rest with higher institutions generally as they work to improve their programs and services under new conditions in the 1980s.

College Profiles

Bucknell University is a private institution founded in 1846. It is located in Lewisburg, a small town in the Susquehanna Valley in central Pennsylvania.

The university enrolls 3,100 undergraduate students from around the world. While incorporating a basic liberal arts curriculum in fine arts, humanities, social sciences, mathematics, and science, Bucknell offers the presence of a professionally accredited engineering program and management and education departments.

Bucknell also offers special programs such as the interdepartmental major, the college major, freshman advisory seminars and humanities semesters, independent study, an honors program, study abroad, and a unique cross-generational program.

Colgate University is an independent, nonsectarian, liberal arts institution founded in 1817 as the Baptist Education Society of the State of New York. As Madison University, it was granted the right to confer degrees in 1846, and in 1890, its name was changed to Colgate University. It is located on a 1400-acre campus in the rural village of Hamilton, New York.

The university enrolls 1,500 undergraduate men and 1,100 women. In addition, there is a small graduate program leading to the M.A.T. degree. Majors are offered in 37 concentrations, including interdisciplinary options.

Colgate has an academic calendar (4-1-4) of four fall and four spring courses, and a January course. Also, students can take advantage of some 20 "study groups" which travel throughout the world. Almost every department offers a specially designed freshman seminar of 15 to 20 students.

Hartwick College is an independent, coeducational, liberal arts institution founded in 1928. It is located on a 175-acre campus overlooking the city of Oneonta, New York, and the Susquehanna River Valley. Pine Lake, a 1,100-acre second campus, is an ecological preserve that serves as a resource for biological and ecological studies.

The college enrolls approximately 1,400 students from 30 states and 12 foreign countries. Majors are offered in 26 areas of study, including programs in management and nursing. In addition, the college offers each student the option of designing a personalized concentration that may be interdisciplinary or career oriented.

Many Hartwick students participate in the college's off-campus programs and may study in a foreign country, in an urban center, or in the field biology program in the Bahamas. Academic departments encourage participation in off-campus internship programs.

Kalamazoo College, an independent, residential, liberal arts institution founded in 1833, maintains its historical connection with the American Baptist Church. It is located on a 160-acre campus in Kalamazoo, Michigan.

The college enrolls 1,450 students from the United States and other countries. The Bachelor of Arts degree is offered in 19 departmental majors and 6 interdepartmental concentrations.

In addition to liberal arts study, Kalamazoo's curriculum includes a quarter spent in career development through positions with businesses, agencies, or communities. One or two quarters are reserved for foreign study at no additional expense to the student. During one quarter of the senior year, the student works off campus on a project of his own choosing.

Kenyon College is a residential liberal arts institution founded in 1824 as an all-male seminary. It remained a men's college until 1969, when women were first admitted. It is located in Gambier, Ohio, about 50 miles northeast of Columbus.

The college enrolls 1,450 students from all sections of the United States. Kenyon's traditional liberal arts curriculum offers 18 majors in the classical academic disciplines, including humanities, sciences, and fine arts.

Kenyon's Bolton Theater is considered one of the finest collegiate drama facilities in the United States. Also, the Integrated Program in Humane Studies offers a series of lectures, seminars, and tutorials. Each spring the college sponsors the Public Affairs Conference Center, a four-day forum at which contemporary issues are debated by political thinkers, educators, journalists, and business executives. The *Kenyon Review* is published on campus.

Occidental College is a liberal arts institution founded in 1887. It is located on a 120-acre residential campus 8 miles from downtown Los Angeles, California.

The college enrolls 1,700 students from 40 states and 30 foreign countries. The student–faculty ratio is less than 14 to 1. Occidental offers 30 majors, including the Independent Pattern of Study, which allows students to design their own majors. The liberal arts core program is interdisciplinary, encompassing natural sciences, humanities, social sciences, and fine arts.

In addition, Occidental offers a diplomacy and world affairs major and a marine biology program that makes use of the college's 85-foot oceanographic research vessel. There are 17 intercollegiate teams and over 100 clubs.

Ohio Wesleyan University is an independent, liberal arts institution founded in 1842 by the Methodist Church, with which a beneficial relationship continues. It is located on a 200-acre campus in Delaware, Ohio, 30 miles north of Columbus.

The university enrolls 2,250 students from the United States and 30 other countries. There are an almost equal number of men and women; one-third of the students are from Ohio. Majors are offered in more than 60 fields, including the liberal arts, sciences, and programs leading to professional degrees in fine arts, music, and nursing. The faculty consists of 160 full-time members.

Through cooperative programs with the Great Lakes Colleges Association (GLCA) and other arrangements, Ohio Wesleyan students may pursue a wide range of opportunities in international education. The university administers a New York Arts Program for the GLCA in New York City in which students apprentice with artists, publishers, theater groups, and broadcasters. Other off-campus apprenticeships are available in a number of fields. The 400,000-volume Beeghly Library is unusually comprehensive for a college of Ohio Wesleyan's size.

The University of Richmond is an independent, privately endowed institution founded by the Virginia Baptists in 1830. It is located on a 350-acre campus in the suburban west end of Richmond, Virginia. The University includes Richmond College, Westhampton College, the Coordinate Colleges for men and women, the E. Claiborne Robins School of Business, the T. C. Williams School of Law, the Graduate School, and University College.

The university enrolls 2,500 undergraduate students and offers 36 majors through 22 departments, and special programs include undergraduate research, independent study, internships, university scholars, and study abroad. The School of Business combines liberal arts study with a professional business curriculum. A full range of extracurricular activities complements the academic program.

The gift of $50 million from the E. Claiborne Robins family in 1969 has enabled Richmond to retain the character of a small college while developing the educational resources of a major university.

Williams College is a privately endowed residential liberal arts college founded in 1793. It is located in Williamstown in the Berkshire mountains of northwestern Massachusetts.

The college enrolls 2,000 students from the United States and more than 40 other countries. Approximately 55 percent of the students are men and 45 percent women; the student–faculty ratio is 12 to 1. The liberal arts curriculum has been enriched by the addition of several interdisciplinary programs, area study offerings, a program of critical languages, and two Master's degree programs: development economics for civil servants from Third World countries, and art history, which is offered in collaboration with Clark Art Institute.

Since 1967, Williams has been on a 4-1-4 calendar. The winter study program, a January term during which each student pursues one project or subject in depth, is a distinctive curricular feature.

References

Aiken, L. R., Jr. 1964. The Prediction of Academic Success and Early Attrition by Means of a Multiple-Choice Biographical Inventory. *American Educational Research Journal* 1: 127–135.

American Association of Collegiate Registrars and Admissions Officers, and the College Board. 1980. *Undergraduate Admissions: The Realities of Institutional Policies, Practices, and Procedures.* New York: College Entrance Examination Board.

Anastasi, A. 1976. *Psychological Testing.* 4th ed. New York: Macmillan.

Anastasi, A.; Meade, M. J.; and Schneiders, A. A. 1960. *The Validation of a Biographical Inventory as a Predictor of College Success* (Research Monograph No. 1). New York: College Entrance Examination Board.

Annis, A. P. 1967. The Autobiography: Its Uses and Values in Professional Psychology. *Journal of Counseling Psychology* 14: 9–17.

Astin, A. W. 1971. *Predicting Academic Performance in College: Selectivity Data for 2,300 American Colleges.* New York: The Free Press.

Astin, A. W. 1976. *Preventing Students from Dropping Out.* San Francisco: Jossey-Bass Publishers.

Astin, A. W., and Holland, J. L. 1961. The Environmental Assessment Technique: A Way to Measure College Environments. *Journal of Educational Psychology* 52: 308–316.

Atkinson, J. W., ed. 1958. *Motives in Fantasy, Action, and Society: A Method of Assessment and Study.* Princeton, N.J.: D. Van Nostrand.

Bailey, S. K. 1980. Marketing Perspectives: Student and National Interests. In *Marketing in College Admissions: A Broadening of Perspectives* (papers presented at the Colloquium on Marketing, Student Admissions, and the Public Interest), pp. 108–120. New York: College Entrance Examination Board.

Baird, L. L. 1967. *Family Income and the Characteristics of College-Bound Students.* ACT Research Report No. 17. Iowa City: American College Testing Program.

Baird, L. L. 1969*a*. *Patterns of Educational Aspiration.* ACT Research Report No. 32. Iowa City: American College Testing Program.

Baird, L. L. 1969*b*. Factors in the Continuance of Accomplishment from High School to College. *Measurement and Evaluation in Guidance* 2: 5–18.

Baird, L. L. 1969*c*. Prediction of Accomplishment in College: A Study of Achievement. *Journal of Counseling Psychology* 16: 246–253.

Baird, L. L. 1976. *Using Self-Reports to Predict Student Performance* (Research Monograph No. 7). New York: College Entrance Examination Board.

Bayer, A. E. 1968. The College Dropout: Factors Affecting Senior College Completion. *Sociology of Education* 41: 305–316.

Bayer, A. E., and Boruch, R. F. 1969. *The Black Student in American Colleges* (ACE Research Report, vol. 4, no. 2). Washington, D.C.: American Council on Education.

Bejar, I. I., and Blew, E. O. 1981. Grade Inflation and the Validity of the Scholastic Aptitude Test. *American Educational Research Journal* 18: 143–156.

Berkshire, J. R. 1958. *Minimum Standards for Naval Air Training: Final Report on the Fleet Follow-Up Study of Fiscal 1956 Graduates* (NSAM Special Report 58-31). Pensacola, Fla.: U. S. Naval School of Aviation Medicine.

Bowen, W. G. 1977. Admissions and the Relevance of Race. *Educational Record* 58: 333–349.

Breland, H. M. 1981. *Assessing Student Characteristics in Admissions to Higher Education: A Review of Procedures* (Research Monograph No. 9). New York: College Entrance Examination Board.

Burgess, M. M., Calkins, E. V., and Richards, J. M. 1972. The Structured Interview: A Selection Device. *Psychological Reports* 31: 867–877.

Calkins, E. V., et al. 1974. Impact on Admission to a School of Medicine of an Innovation in Selection Procedures. *Psychological Reports* 35: 1135–1142.

Carnegie Council on Policy Studies in Higher Education. 1977. Public Policy and Academic Policy. In *Selective Admissions in Higher Education.* San Francisco: Jossey-Bass Publishers.

Centra, J. A. 1980. College Enrollment in the 1980s: Projections and Possibilities. *Journal of Higher Education* 51: 18–39.

Chickering, A. W. 1969. *Education and Identity.* San Francisco: Jossey-Bass Publishers.

Clendenen, D. M. 1972. Tests and Reviews: Vocations – Interests (review). In *The Seventh Mental Measurements Yearbook,* vol. II, O. K. Buros, ed., pp. 1471–1473. Highland Park, N.J.: Gryphon Press.

Coffman, W. E. 1966. On the Validity of Essay Tests of Achievement. *Journal of Educational Measurement* 3: 151–156.

College Board. 1963. A Statement on Personality Testing. *College Board Review,* no. 51, pp. 11–13.

College Board. 1980*a*. *Marketing in College Admissions: A Broadening of Perspectives* (papers presented at the Colloquium on Marketing, Student Admis-

sions, and the Public Interest). New York: College Entrance Examination Board.

College Board. 1980*b*. *National Report: College-Bound Seniors, 1980*. Princeton, N.J.: Educational Testing Service.

Creager, J. A. 1965. *Predicting Doctorate Attainment with GRE and Other Variables*. Technical Report No. 25. Washington, D.C.: Office of Scientific Personnel, National Academy of Sciences, National Research Council.

Creager, J. A., and Harmon, L. R. 1966. *On-the-Job Validation of Selection Variables*. Technical Report No. 26. Washington, D.C.: Office of Scientific Personnel, National Academy of Sciences, National Research Council.

Cuca, J. M., Sakakeeny, L. A., and Johnson, D. G. 1976. *The Medical School Admissions Process: A Review of the Literature 1955–1976*. Special Report. Washington, D.C.: Association of American Medical Colleges.

Darley, J. G. 1962. *Promise and Performance: A Study of Ability and Achievement in Higher Education*. Berkeley, Calif.: Center for the Study of Higher Education, University of California.

Davis, E. E. 1973. An Analysis of Autobiographical Statements of Adolescents. *Measurement and Evaluation in Guidance* 6: 117–121.

Dawes, R. M. 1971. A Case Study of Graduate Admissions: Application of Three Principles of Human Decision Making. *American Psychologist* 26: 180–188.

Dawes, R. M., and Corrigan, B. 1974. Linear Models in Decision Making. *Psychological Bulletin* 81: 95–106.

Dolliver, R. H. 1969. Strong Vocational Interest Blank Versus Expressed Vocational Interests: A Review. *Psychological Bulletin* 72: 95–107.

Entwistle, N. J. 1972. Personality and Academic Attainment. *British Journal of Educational Psychology* 42: 137–151.

Etaugh, A.; Etaugh, C. F.; and Hurd, D. E. 1972. Reliability of College Grades and Grade Point Averages: Some Implications for Prediction of Academic Performance. *Educational and Psychological Measurement* 32: 1045–1049.

Farley, J. 1978. Academic Recommendations: Males and Females as Judges and Judged. *AAUP Bulletin* 64: 82–85.

Feldman, K. A., and Newcomb, T. M. 1969. *The Impact of College on Students*, vols. 1 and 2. San Francisco: Jossey-Bass Publishers.

Fishman, J. A., and Pasanella, A. K. 1960. College-Selection Studies. *Review of Educational Research* 30: 298–310.

Folger, J. K.; Astin, H. S.; and Bayer, A. E. 1970. *Human Resources and Higher Education*. New York: Russell Sage Foundation.

Frankel, M. M., and Harrison, F. W. 1977. *Projections of Educational Statistics to 1985–1986*. Washington, D.C.: National Center for Educational Statistics, U. S. Department of Health, Education and Welfare.

Frederiksen, N. 1954. The Evaluation of Personal and Social Qualities. In *College Admissions, Proceedings of the Colloquia on College Admissions*. vol. 2, pp. 93–105. New York: College Entrance Examination Board.

Fredericksen, N. 1962. Factors in In-Basket Performance. *Psychological Monographs 76* (whole number 541).

Frederiksen, N., and Ward, W. C. 1978. Measures for the Study of Creativity in Scientific Problem-Solving. *Applied Psychological Measurement* 2: 1–24.

Freeberg, N. E. 1967. The Biographical Information Blank as a Predictor of Student Achievement: A Review. *Psychological Reports* 20: 911–925.

Gardner, J. W. 1961. *Excellence: Can We Be Equal and Excellent Too?* New York: Harper and Row.

Goodman, L. A. 1976. The Relationship Between Modified and Usual Multiple-Regression Approaches to the Analysis of Dichotomous Variables. In *Sociological Methodology*, David R. Heise, ed., pp. 83–110. San Francisco: Jossey-Bass Publishers.

Grant, G. et al. 1979. *On Competence: A Critical Analysis of Competence-Based Reforms in Higher Education*. San Francisco: Jossey-Bass Publishers.

Guilford, J. P. 1965. *Fundamental Statistics in Psychology and Education*. 4th ed. New York: McGraw-Hill Book Company.

Guillemin, J.; Holstrom, L. L.; and Garvin, M. 1979. Judging Competence: Letters of Recommendation for Men and Women Faculties. *School Review* 87: 157–170.

Hackman, J. D., and Taber, T. D. 1979. Patterns of Undergraduate Performance Related to Success in College. *American Educational Research Journal* 16: 117–138.

Harmon, L. R. 1966. *Fourteen Years of Research on Fellowship Selection*. Publication 1420. Washington, D.C.: National Academy of Sciences, National Research Council.

Hills, J. R. 1966. Diversity and the Effect of Selective Admissions. *Journal of Educational Measurement* 3: 235–242.

Hills, J. R. 1971. The Use of Measurement in Selection and Placement. In *Educational Measurement*. 2nd ed. Robert L. Thorndike, ed., pp. 680–732. Washington, D.C.: American Council on Education.

Hilton, T. L. *Persistence in Higher Education: An Empirical Study*. In preparation. Princeton, N.J.: Educational Testing Service.

Hoffman, P. J. 1960. The Paramorphic Representation of Clinical Judgment. *Psychological Bulletin* 57: 116–131.

Hollander, E. P. 1957. Reliability of Peer Nominations Under Various Conditions of Administration. *Journal of Applied Psychology* 41: 85–90.

Hollander, E. P. 1965. Validity of Peer Nominations in Predicting a Distant Performance Criterion. *Journal of Applied Psychology* 49: 434–438.

Holmes, D. J., and Hertel, R. 1967. Predictions of GPA from Application Biographies (abstract). *Journal of Medical Education* 42: 269.

Humphreys, L. G. 1968. The Fleeting Nature of the Prediction of College Academic Success. *Journal of Educational Psychology* 59: 375–380.

Humphreys, L. G., and Taber, T. 1973. Postdiction Study of the Graduate Record Examination and Eight Semesters of College Grades. *Journal of Educational Measurement* 10: 179–184.

Ihlanfeldt, W. 1980. *Achieving Optimal Enrollments and Tuition Revenues: A Guide to Modern Methods of Market Research, Student Recruitment, and Institutional Pricing*. San Francisco: Jossey-Bass Publishers.

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Katz, M. R. 1972. Tests and Reviews: Vocations—Interests (review). In *The Seventh Mental Measurements Yearbook*, vol. II, O. K. Buros, ed., pp. 1462–1465. Highland Park, N.J.: Gryphon Press.

Kendrick, S. A. 1964. The Personality Testing Tangle. *College Board Review*, no. 54, pp. 26–30.

Kotler, P. 1976. Applying Marketing Theory to College Admissions. In *A Role for Marketing in College Admissions* (Papers presented at the Colloquium on College Admissions), pp. 54–72. New York: College Entrance Examination Board.

Kryger, B. R., and Shikiar, R. 1978. Sexual Discrimination in the Use of Letters of Recommendation: A Case of Reverse Discrimination. *Journal of Applied Psychology* 63: 309–314.

Lenning, O. T.; Sauer, K.; and Beal, P. E. 1980. *Student Retention Strategies* (AAHE-ERIC/Higher Education Research Report No. 8). Washington, D.C.: American Association for Higher Education, ERIC Clearinghouse on Higher Education.

Levitt, M. 1978. That Bouillabaisse: Medical School Admissions. In *Hurdles: The Admissions Dilemma in American Higher Education*, H. S. Sacks et al., eds., pp. 239–267. New York: Atheneum.

Lewin, A. Y., and Zwany, A. 1976. Peer Nominations: A Mode', Literature Critique and a Paradigm for Research. *Personnel Psychology* 29: 423–447.

Lohnes, P. R. 1972. Tests and Reviews: Vocations—Interests (review). In *The Seventh Mental Measurements Yearbook*, vol. II, O. K. Buros, ed., pp. 1423–1424. Highland Park, N.J.: Gryphon Press.

Lunneborg, P. W., and Lillie, C. 1973. Sexism in Graduate Admissions: The Letter of Recommendation (comment). *American Psychologist* 28: 187–189.

Magarrell, J. 1980. The 1980s: Higher Education's "Not Me" Decade. *Chronicle of Higher Education*, January 7, pp. 6–9.

Malloy, J. P., and Ivanoff, J. M. 1964. Further Use of the Life Experience Inventory in Predicting College Achievement. *Journal of Educational Research* 57: 522–525.

Manning, W. H. 1977. The Pursuit of Fairness in Admissions. In *Selective Admissions in Higher Education* (a report of the Carnegie Council on Policy Studies in Higher Education), pp. 20–64. San Francisco: Jossey-Bass Publishers.

McClelland, D. C. 1961. *The Achieving Society*. New York: The Free Press.

Mehrabian, A. 1969. Undergraduate Ability Factors in Relationship to Graduate Performance. *Educational and Psychological Measurement* 29: 409–419.

Mendel, R. W., and Tabb, W. G. 1977. Problems in Admissions in U.S. Dental Schools. *College and University* 52: 299–316.

Messick, S. 1967. Personality Measurement and College Performance. In *Problems in Human Assessment*, D. N. Jackson and S. Messick, eds., pp. 834–845. New York: McGraw-Hill Book Company.

Messick, S. 1979. Potential Uses of Noncognitive Measurement in Education. *Journal of Educational Psychology* 71: 281–292.

Moll, R. 1979. *Playing the Private College Admissions Game*. New York: Times Books.

Moore, L. F., and Lee, A. J. 1974. Comparability of Interviewer, Group, and Individual Interview Ratings. *Journal of Applied Psychology* 59: 163–167.

Nerlove, M., and Press, S. J. 1973. *Univariate and Multivariate Log-Linear and Logistic Models* (R1306 EDA/NIH). Santa Monica, Calif.: The Rand Corporation.

Nichols, R. C. 1966. Nonintellective Predictors of Achievement in College. *Educational and Psychological Measurement* 26: 899–915.

Nichols, R. C., and Holland, J. L. 1963. Prediction of the First Year College Performance of High Aptitude Students. *Psychological Monographs: General and Applied* 77: 1–29.

Nicholson, E. 1970. *Success and Admission Criteria for Potentially Successful Risks* (final report). Providence, R.I.: Brown University.

Owens, W. A. 1976. Background Data. In *Handbook of Industrial and Organizational Psychology*. M. D. Dunnette, ed. Chicago: Rand McNally.

Pace, C. R. 1960. Five College Environments. *College Board Review*, no. 41, pp. 24–28.

Pace, L. A., and Schoenfeldt, L. F. 1977. Legal Concerns in the Use of Weighted Applications. *Personnel Psychology* 30: 159–166.

Payne, D. A.; Rapley, F. E.; and Wells, R. A. 1973. Application of a Biographical Data Inventory to Estimate College Academic Achievement. *Measurement and Evaluation in Guidance* 6: 152–156.

Peng, S. S., and Fetters, W. B. Variables Involved in Withdrawal during the First Two Years of College: Preliminary Findings from the National Longitudinal Study of the High School Class of 1972. *American Educational Research Journal* 15: 361–372.

Pervin, L. A.; Reik, L. E.; and Dalrymple, W., eds. 1966. *The College Dropout and the Utilization of Talent*. Princeton, N.J.: Princeton University Press.

Peterson, R. E. et al. 1979. *Lifelong Learning in America*. San Francisco: Jossey-Bass Publishers.

Press, S. J., and Wilson, S. 1978. Choosing Between Logistic Regression and Discriminant Analysis. *Journal of the American Statistical Association* 73: 699–705.

Ramist, L. 1981. *College Student Attrition and Retention* (College Board Report No. 81-1). New York: College Entrance Examination Board.

Regents of the University of California v. Bakke, 438 U.S. 265, 98 C.t. 2377 57L.Ed. 2d 750 (1978).

Richards, J. M. Jr.; Holland, J. L.; and Lutz, S. W. 1967. Prediction of Student Accomplishment in College. *Journal of Educational Psychology* 58: 343–355.

Riesman, D. 1980. *On Higher Education: The Academic Enterprise in an Era of Using Student Consumerism*. San Francisco: Jossey-Bass Publishers.

Rim, Y. 1976. How Reliable Are Letters of Recommendation? *Journal of Higher Education* 47: 437–445.

Schrader, W. B. 1971. The Predictive Validity of College Board Admissions Tests. In *The College Board Admissions Testing Program: A Technical Report on Research and Development Activities Relating to the Scholastic Aptitude Test and Achievement Tests*, William H. Angoff, ed., pp. 117–145. New York: College Entrance Examination Board.

Shaffer, D. R.; Mays, P. V.; and Etheridge, K. 1976. Who Shall Be Hired: A Biasing Effect of the Buckley Amendment on Employment Practices? *Journal of Applied Psychology* 61: 571–575.

Smith, G. M. 1967. Usefulness of Peer Ratings of Personality in Educational Research. *Educational and Psychological Measurement* 27: 967–984.

Stern, G. G. 1970. *People in Context: Measuring Person-Environment Congruence in Education and Industry*. New York: John Wiley and Sons.

Taber, T. D., and Hackman, J. D. 1976. Dimensions of Undergraduate College Performance. *Journal of Applied Psychology* 61: 546–558.

Thomas, J. A. 1978. Heavy Traffic on the Purple Brick Road: The Route to Law School. In *Hurdles: The Admissions Dilemma in American Higher Education*, Sacks et al., eds., pp. 212–238. New York: Atheneum.

Thresher, B. A. 1966. *College Admissions and the Public Interest*. New York: College Entrance Examination Board.

Tinto, V. 1975. Dropout from Higher Education: A Theoretical Synthesis of Recent Research. *Review of Educational Research* 45: 89–125.

Tupes, E. C. 1957. *Relationships Between Behavior Trait Ratings by Peers and Later Officer Performance of USAF Officer Candidate School Graduates* (Research Report/AFPTRC-TN-57-125). Lackland Air Force Base, Tex.: Air Force Personnel and Training Research Center, Air Research and Development Command.

United States Bureau of the Census. 1967. Projections of the Population of the United States. *Current Population Reports*, Series P-25, No. 381.

United States Bureau of the Census. 1971. Projections of the Population of the United States. *Current Population Reports*, Series P-25, No. 470.

United States Bureau of the Census. 1977. Projections of the Population of the United States. *Current Population Reports*, Series P-25, No. 704.

Wagner, R. 1949. The Employment Interview: A Critical Summary. *Personnel Psychology* 2: 17–46.

Walker, S. H., and Duncan, D. B. 1967. Estimation of the Probability of an Event as a Function of Several Independent Variables. *Biometrika* 54: 167–179.

Wallach, M. A. 1976. Psychology of Talent and Graduate Education. In *Individuality in Learning*, Samuel Messick et al., eds., pp. 178–210. San Francisco: Jossey-Bass Publishers.

Walsh, W. B. 1967. Validity of Self-Report. *Journal of Counseling Psychology* 14: 18–23.

Walsh, W. B. 1968. Validity of Self-Report: Another Look. *Journal of Counseling Psychology* 15: 180–186.

Walsh, W. B. 1969. Self-Report Under Socially Undesirable and Distortion Conditions. *Journal of Counseling Psychology* 16: 569–574.

Waters, L. K., and Waters, C. W. 1970. Peer Nominations as Predictors of Short-Term Sales Performance. *Journal of Applied Psychology* 54: 42–44.

Webb, S. C. 1960. The Comparative Validity of Two Biographical Inventory Keys. *Journal of Applied Psychology* 44: 177–183.

Wells, P. H. 1978. Applying to College: Bulldog Bibs and Potency Myths. In *Hurdles: The Admissions Dilemma in American Higher Education*. H. S. Sacks et al., eds., pp. 48–75. New York: Atheneum.

Werts, C.; Linn, R. L.; and Jöreskog, K. G. 1978. Reliability of College Grades from Logitudinal Data. *Educational and Psychological Measurement* 38: 89–95.

West, E. D. 1965. Access to Colleges and Universities in the United States. In *National Studies*, The International Study of University Admissions, *Access to Higher Education*, vol. II, pp. 593–644. Paris: United Nations Educational, Scientific, and Cultural Association of Universities.

Whitney, D. R. 1969. Predicting from Expressed Vocational Choice: A Review. *Personnel and Guidance Journal* 48: 279–286.

Wickenden, J. W., Jr. 1979. Memorandum to All Princeton Alumni on the Admissions Process. *Princeton Alumni Weekly*, October 22, 1979.

Willingham, W. W. 1965. The Application Blank as a Predictive Instrument. *College and University* 40: 271–281.

Willingham, W. W., et al. 1973. *The Source Book for Higher Education*. New York: College Entrance Examination Board.

Willingham, W. W. 1974. Transfer Standards and the Public Interest. In *College Transfer: Working Papers and Recommendations from the Airlie House Conference, December 2–4, 1973*, pp. 26–49. Washington, D.C.: Association Transfer Group.

Willingham, W. W., and Breland, H. M. 1977. The Status of Selective Admissions. In *Selective Admissions in Higher Education* (a Report of the Carnegie Council on Policy Studies in Higher Education), pp. 65–252. San Francisco: Jossey-Bass Publishers.

Wilson, K. M. 1978. *Predicting Long-Term Performance in College of Minority and Nonminority Students: A Comparative Analysis in Two Collegiate Settings* (College Board RDR-77-78-3 and ETS RB-78-6). Princeton, N.J.: Educational Testing Service.

Wing, C. W., Jr., and Wallach, M. A. 1971. *College Admissions and the Psychology of Talent*. New York: Holt, Rinehart, and Winston.

Appendixes

Agnes Scott • Allegheny • American University • Antioch • Bard College • Bates • Beloit • Bennington • Boston College • Boston University Bowdoin • Brandeis • Bucknell • Carleton • Case Western Reserve • University of Chicago • Clark • Coe • Colby • Colby-Sawyer • Colgate Colorado College • Connecticut College • Denison • University of Denver • Dickinson • Drew • Earlham • Eckerd • Elmira • Emory • Fairfield • Fisk Fordham • Franklin and Marshall • Furman • Gettysburg • Goucher • Hamilton • Hampshire • Hartwick • Haverford • Hobart • Hood Kalamazoo • Kenyon • Knox Lafayette • Lawrence • Lehigh Lewis and Clark • Macalester Manhattan • Manhattanville • Mills Mount Holyoke • Muhlenberg Newcomb College • New York University Oberlin • Occidental • Ohio Wesleyan • Pitzer • Pomona • University of Puget Sound • Randolph Macon Woman's College • University of Redlands • Reed Rice • University of Richmond • Ripon • University of Rochester • Rollins • St. Lawrence • Salem • Sarah Lawrence • Scripps • Simmons • Skidmore University of the South • Stephens • Sweet • Susquehanna • Texas Christian University • Tulane • Union • Valparaiso • Vanderbilt • Vassar Washington College • Washington University • Washington and Lee • Wesleyan • Wheaton • Wheelock • Whitman • Willamette • William Smith • Williams

COMMON APPLICATION

APPLICATION FOR UNDERGRADUATE ADMISSION

These colleges and universities encourage the use of this application. The accompanying instructions tell you how to complete, copy, and file your application to any one or several of the colleges. Please type or print in black ink.

Legal name: _____ _____ _____ _____ _____
Last *First* *Middle (complete)* *Jr., etc.* *Sex*

Prefer to be called: _____ (nickname) **Former last name(s) if any:** _____

Are you applying as a freshman ☐ **or transfer student** ☐ **?** **For the term beginning:** _____

Permanent home address: _____
Number and Street

_____ _____ _____ _____
City or Town *County* *State* *Zip*

If different from the above, please give your mailing address for all admission correspondence:

Mailing address: _____
Number and Street

_____ _____ _____
City or Town *State* *Zip*

Telephone at mailing address: _____ / _____ **Permanent home telephone:** _____ / _____
Area Code *Number* *Area Code* *Number*

Birthdate: _____
Month Day Year

The following items are optional: Social Security number, if any: ☐☐☐ ☐☐ ☐☐☐☐

Place of birth: _____ **Marital status:** _____ **Height:** ___ ___ **Weight:** _____

Of what country are you a citizen? _____ **Type of Visa** _____ **Visa Number** _____

How would you describe yourself? (Please check one)

☐ American Indian or Alaskan Native
☐ Asian or Pacific Islander (including Indian subcontinent)
☐ Black (non-Hispanic)
☐ Hispanic (including Puerto Rican)
☐ White, Anglo, Caucasian American (non-Hispanic)
☐ Other (Specify) _____

EDUCATION

Please list all the secondary schools, including summer schools, programs, and institutes you have attended since 8th grade.

Schools attended, present school first:

Name of School	Location (City, State, Zip)	Dates Attended

Present secondary school ACT/CEEB code number: _____ **Date of secondary school graduation:** _____

Is your school public? _____ **private?** _____ **parochial?** _____

College advisor: _____ _____ **School telephone:** _____ / _____
Name *Position* *Area Code* *Number*

Please list all colleges at which you have taken courses for credit and list names of courses on a separate sheet. Please have a transcript sent from each institution as soon as possible.

Name of College	Location (City, State, Zip)	Degree Candidate?	Dates Attended

If you are not attending school at the present time, please describe what you are doing:

Probable area(s) of academic concentration / major: _____

Special college or division if applicable: _____

Probable career or professional plans: _____

Will you be a candidate for financial aid? Yes _____ No _____ If yes, the appropriate form(s) was/will be filed on: _____

TEST INFORMATION Be sure to note the tests required for each institution to which you are applying. The appropriate test scores must be submitted to each institution as soon as possible. Please list your test plans below.

	Scholastic Aptitude Test (SAT)	Achievement Tests (ACH)	Subjects			American College Test (ACT)
Dates taken or						
to be taken						

FAMILY

Father's full name: _____ Is he living? _____

Home address if different from yours: _____

Occupation: _____ *(Describe briefly)* *(Name of business or organization)*

Name of college (if any): _____ Degree: _____ Year: _____

Name of professional or graduate school (if any): _____ Degree: _____ Year: _____

Mother's full name: _____ Is she living? _____

Home address if different from yours: _____

Occupation: _____ *(Describe briefly)* *(Name of business or organization)*

Name of college (if any): _____ Degree: _____ Year: _____

Name of professional or graduate school (if any): _____ Degree: _____ Year: _____

If not with both parents, with whom do you make your permanent home: _____

Please give names and ages of your brothers or sisters. If they have attended college, give the names of the institutions attended, degrees, and approximate dates:

ACADEMIC HONORS

Briefly describe any scholastic distinctions or honors you have won since the eighth grade:

EXTRACURRICULAR AND PERSONAL ACTIVITIES

Please list your principal extracurricular, community, and family activities and hobbies in the order of their interest to you. Include specific events and/or major accomplishments such as musical instrument played, varsity letters earned, etc. Please (✓) in the right column those activities you hope to pursue in college.

Activity	Grade level or year of participation 9	10	11	12	Approximate number of hours spent per week	Positions held or honors won	Do you plan to participate in college?

WORK EXPERIENCE

Please list any job (including summer employment) you have held during the past three years.

Specific nature of work	Employer	Approximate dates of employment	Approximate no. of hours spent per week

PERSONAL STATEMENT

It is our aim to get to know you as well as possible through this application. With this in mind, please describe in detail some special interest, experience, or achievement or anything else you would like us to know about you. Essays on a personal, local, or national issue that is of particular concern to you are also welcome. Attach extra pages (same size please) if your statement exceeds the limits of this page. Also feel free to submit tapes of musical performance, photographs or examples of art work, samples of writing, or other examples of your creative work.

My signature below indicates that all the information contained in my application is factually correct and honestly presented.

Signature _____ Date _____

These colleges admit students of any race, sex*, color, national and ethnic origin to all rights, privileges, programs, and activities generally accorded or made available to students at the college. They do not discriminate on the basis of race, sex*, color, handicap, national and ethnic origin in administration of their educational policies, admissions policies, scholarship and loan programs, and athletic and other college administered programs.

*Private undergraduate institutions which have been traditionally and continually single sex are exempted by Title IX.

Agnes Scott • Allegheny • American University • Antioch • Bard College • Bates • Beloit • Bennington • Boston College • Boston University Brandeis • Brandeis • Bucknell • Carleton • Case Western Reserve • University of Chicago • Clark • Coe • Colby • Colby-Sawyer • Colgate Colorado College • Connecticut College • Denison • University of Denver • Dickinson • Drew • Earlham • Eckerd • Elmira • Emory • Fairfield • Fisk Fordham • Franklin and Marshall • Furman • Gettysburg • Goucher • Hamilton • Hampshire • Hartwick • Haverford • Hobart • Hood Kalamazoo • Kenyon • Knox Lafayette • Lawrence • Lehigh Lewis and Clark • Macalester Manhattan • Manhattanville • Mills Mount Holyoke • Muhlenberg Newcomb College • New York University Oberlin • Occidental • Ohio Wesleyan • Pitzer • Pomona • University of Puget Sound • Randolph Macon Woman's College • University of Redlands • Reed Rice • University of Richmond • Ripon • University of Rochester • Rollins • St. Lawrence • Salem • Sarah Lawrence • Scripps • Simmons • Skidmore University of the South • Stephens • Stetson • Susquehanna • Texas Christian University • Tulane • Union • Valparaiso • Vanderbilt • Vassar Washington College • Washington University • Washington and Lee • Wesleyan • Wheaton • Wheelock • Whitman • Willamette • William Smith • Williams

COMMON APPLICATION

SCHOOL REPORT

SECONDARY SCHOOL ADVISOR EVALUATION

These colleges and universities have agreed to accept a copy of this school report instead of their own forms. Please type or print in black ink.

APPLICANT

After filling in your name and address below, give this form to your college advisor.

Student name: _____
Last *First* *Middle (complete)* *Jr., etc.*

Address: _____

SECONDARY SCHOOL COLLEGE ADVISOR

After filling in the blanks below, use this form to describe the applicant. Send us an official transcript and if available, please send school profile and transcript legend. (Please check transcript copies for readability.)

This candidate ranks _____ in a class of _____ students.

The rank covers a period from _____ (mo./yr.) to _____ (mo./yr.). If a precise rank is not available, please indicate rank to the nearest tenth from the top. The rank (is, is not) weighted.

Of this candidate's graduating class, _____ % plan to attend a four-year college.

How long have you known the applicant? _____

In what context have you known the applicant? _____

What are the first words that come to your mind to describe the applicant? _____

_____

Advisor's name: _____
Last *First* *Middle*

Position: _____ School: _____

School address: _____

Office telephone: _____
Area code *Number*

Signature: _____ Date: _____

(Over, please)

Please feel free to write whatever you think is important about the applicant, including a description of academic and personal characteristics. We are particularly interested in evidence about the candidate's intellectual promise, motivation, relative maturity, integrity, independence, originality, initiative, leadership potential, capacity for growth, special talents and enthusiasm. We welcome information that will help us to differentiate this student from others.

CONFIDENTIALITY:

We value your comments highly and ask that you complete this form in the knowledge that it may be retained in the student's file should the applicant matriculate at a member college. In accordance with the Family Educational Rights and Privacy Act of 1974, matriculating students do have access to their permanent files which may include forms such as this one. Colleges do not provide access to admissions records to applicants, those students who are rejected, or those students who decline an offer of admission. Again, your comments are important to us and we thank you for your cooperation.

These colleges admit students of any race, sex*, color, national and ethnic origin to all rights, privileges, programs, and activities generally accorded or made available to students at the college. They do not discriminate on the basis of race, sex*, color, handicap, national and ethnic origin in administration of their educational policies, admissions policies, scholarship and loan programs, and athletic and other college administered programs.

*Private undergraduate institutions which have been traditionally and continually single sex are exempted by Title IX.

Agnes Scott • Allegheny • American University • Antioch • Bard College • Bates • Beloit • Bennington • Boston College • Boston University • Bowdoin • Brandeis • Bucknell • Carleton • Case Western Reserve • University of Chicago • Clark • Coe • Colby • Colby-Sawyer • Colgate • Colorado College • Connecticut College • Denison • University of Denver • Dickinson • Drew • Earlham • Eckerd • Elmira • Emory • Fairfield • Fisk • Fordham • Franklin and Marshall • Furman • Gettysburg • Goucher • Hamilton • Hampshire • Hartwick • Haverford • Hobart • Hood • Kalamazoo • Kenyon • Knox • Lafayette • Lawrence • Lehigh • Lewis and Clark • Macalester • Manhattan • Manhattanville • Mills • Mount Holyoke • Muhlenberg • Newcomb College • New York University • Oberlin • Occidental • Ohio Wesleyan • Pitzer • Pomona • University of Puget Sound • Randolph Macon Woman's College • University of Redlands • Reed • Rice • University of Richmond • Ripon • University of Rochester • Rollins • St. Lawrence • Salem • Sarah Lawrence • Scripps • Simmons • Skidmore • University of the South • Stephens • Stetson • Susquehanna • Texas Christian University • Tulane • Union • Valparaiso • Vanderbilt • Vassar • Washington College • Washington University • Washington and Lee • Wesleyan • Wheaton • Wheelock • Whitman • Willamette • William Smith • Williams

COMMON APPLICATION

TEACHER REFERENCE

Student name _____
Last *First* *Middle*

Address _____

School Now Attending _____

The colleges and universities listed above encourage the use of this form. The accompanying instructions tell you how to complete the copy and file with any one or several of the colleges. Please type or print in black ink.

APPLICANT:

Fill in the above information and give this form and a stamped envelope, addressed to each college to which you are applying that requests a Teacher Reference, to a teacher who has taught you an academic subject.

TEACHER:

The student named above is applying for admission to one or more Common Application group colleges. The Admissions Committees find candid evaluations helpful in choosing from among highly qualified candidates. We are primarily interested in whatever you think is important about the applicant's academic and personal qualifications for college. Please submit your references promptly, particularly if the student is applying to a college as an early decision candidate. A photocopy of this reference form, or another reference you may have prepared on behalf of this student is acceptable. You are encouraged to keep the original of this form in your private files for use should the student need additional recommendations. We are grateful for your assistance.

RATINGS

Compared to other students in your school who are applying to selective colleges, check how you would rate the applicant in terms of academic skills and potential:

No basis		Below Average	Average	Good (above average)	Excellent (top 10%)	Outstanding (top 2-3%)	One of the top few encountered in my career
	Creative, original thought						
	Motivation						
	Independence, initiative						
	Intellectual ability						
	Academic achievement						
	Written expression of ideas						
	Effective class discussion						
	Disciplined work habits						
	Potential for growth						
	SUMMARY EVALUATION						

(Please see reverse side)

EVALUATION

1. What are the first words which come to mind to describe the applicant?

_____

_____

2. Academic Characteristics:

_____

_____

_____

3. Personal Characteristics:

_____

_____

_____

BACKGROUND INFORMATION

How long have you known the applicant? _____

Note any capacity in which you have known the applicant outside the classroom (advisor, family friend, etc): _____

_____

_____

List the courses you have taught, noting for each course the applicant's year in school (10th, 11th, 12th), the level of course difficulty (AP, elective), and the applicant's grade.

Please return to the appropriate admissions office(s) in the envelope(s) provided you by the applicant.

Secondary School _____

School Address _____

Name (print) _____

Position _____

Signature _____ Date _____

CONFIDENTIALITY.

We value your comments highly and ask that you complete this form in the knowledge that it may be retained in the student's file should the applicant matriculate at a member college. In accordance with the Family Educational Rights and Privacy Act of 1974, matriculating students do have access to their permanent files which may include forms such as this one. Colleges do not provide access to admissions records to applicants, those students who are rejected, or those students who decline an offer of admission. Again, your comments are important to us and we thank you for your cooperation.

These colleges admit students of any race, sex*, color, national and ethnic origin to all rights, privileges, programs, and activities generally accorded or made available to students at the college. They do not discriminate on the basis of race, sex,* color, handicap, national and ethnic origin in administration of their educational policies, admissions policies, scholarship and loan programs, and athletic and other college administered programs.

*Private undergraduate institutions which have been traditionally and continually single sex are exempted by Title IX.

PERSONAL QUALITIES PROJECT

COLLEGE RATING FORM Name _____

I. Check any that apply — but only if the quality stands out and provides a special argument for admission. (Probably a 4 or 5 on the PQ scale)

A. OUTSTANDING TALENT AND ACCOMPLISHMENT
(widely recognized, unusually valuable to have represented in student body)

_____ musical, artistic, literary
_____ leadership, entrepreneurial
_____ science and technology
_____ athletic
_____ other (e.g., unusual feat, national chess ranking)

Institution Code

B. UNUSUAL PERSONAL ATTRIBUTES

_____ unusually mature and well-directed
_____ has overcome unusual hardships
_____ unusually significant work experience
_____ unusual and outstanding character references
_____ unusually strong intellectual orientation aside from academic competence)
_____ unusually rich experience through travel, activities, etc.
_____ unusual personal or cultural background

A/R Date

/

C. OTHER INSTITUTIONAL CONSIDERATIONS

_____ comes from an important school or community
_____ would strengthen an important past or prospective tie (alumnus, prominent family, faculty)
_____ chosen field fits an enrollment need

II. Did the applicant have an interview on campus or submit any sample of writing, art, or other creative work as part of the application? Check one in each column.

Interview	*Sample*
_____	_____ No
_____	_____ Yes, outstanding
_____	_____ Yes, good
_____	_____ Yes

DO NOT WRITE HERE

_____,
_____,
_____,
_____, _____, _____, _____,
_____, _____, _____, _____.

III. _____ Overall *Academic* Rating (based upon grades, test score, etc. — not on this form)
_____ Overall *Personal* Rating (based upon such qualities as represented on this form)

Reader Date

/

_____, _____, _____, _____

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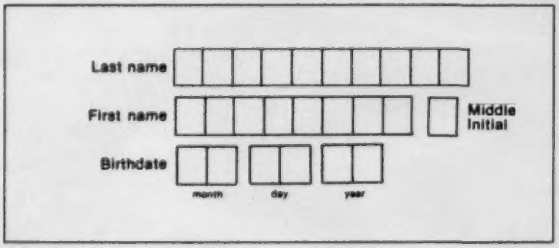
RESEARCH QUESTIONNAIRE for all entering freshmen—fall, 1979

Dear Entering Student:

Our college is actively participating in an important research study involving nine private colleges throughout the country. The study is concerned with the way in which the interests and goals of students are related to their subsequent activities and educational development. We hope this research will help us serve students better. Your class has special significance in this study because we want to ask you a few questions now and then later seek your reactions to college.

We urge your frank answers to the questions that follow, though your participation is voluntary. Your responses will remain strictly confidential. Please fill in your name and birthdate below only for identification in this study. Thank you for your help.

Director of Admissions



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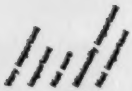
1 The faculty and staff of this institution take a great deal of interest in how entering students view college, what sort of expectations you have, and what you hope to accomplish. If we understand better what you want out of college, we hope we can do a better job of helping you achieve it. Of course, different students have somewhat different interests.

Each of the paragraphs below represents an educational goal that may or may not be important to you. Please read through all of the statements just to get a feel for what is included. Then consider each one, and circle one of the numbers 1 to 5 to indicate how important you feel that particular goal is to you.



5 4 3 2 1 My main goal in college will be to get training for the work I want to do, or make the grades I need to get into a good school after I finish here.

5 4 3 2 1 I see college as my great opportunity to read a lot, exchange ideas, learn about the significant cultures of the world, and generally to become an aware and more sophisticated person.

5 4 3 2 1 I'm an active person. I like sports and other outdoor activities. Developing my talents and interests in this area is important to me.

5 4 3 2 1 I view college as a place where a person can learn practical skills valuable through a lifetime. I am especially interested in developing specific skills such as foreign language competency, computer programming, reading and math skills, good work habits, etc.

5 4 3 2 1 I don't want to just learn a lot of facts in college; to me it's very important to learn how to deal with those facts. For example, learning how to reason, evaluate information, and construct a defensible argument are high priorities for me.

5 4 3 2 1 Extracurricular activities appeal to me because they are a good way to get a lot out of your education; especially learning how to organize resources, work with others, and take the lead in achieving an objective. I hope to participate fully in this aspect of college life.

5 4 3 2 1 I am not at all sure what I want to do for a career. To me it seems important that I get a better sense of direction and I hope to do that in college.

5 4 3 2 1 I am especially concerned about ethical, moral, and religious issues. In the next year or so I would like to get a better sense of my own values in this area.

5 4 3 2 1 I would very much like to develop a meaningful relationship with another person while I'm in college. If it's lasting, good; if it's not, that's o.k. too.

5 4 3 2 1 I like to express myself creatively. I already have some talent in an area of interest to me (for example, theatre, music, painting, crafts, writing) and want to develop it further in college.

5 4 3 2 1 I am very interested in community and social problems and would like to learn more about what's going on in the world. The opportunity to get personally involved in some sort of significant community service activity or environmental project would be important to me.

5 4 3 2 1 In the next few years I would like particularly to develop more skill and confidence in dealing with different kinds of people. I think the social side of college is very important.

2 Below are reasons that may have influenced your decision to attend this particular college. Please read them all over first, and then check those reasons (up to 5) that were especially important to you.

- ☐ 01 This college has a very good academic reputation, generally.
- ☐ 02 I think this college is about right for my ability.
- ☐ 03 This college has a particular academic program that interests me.
- ☐ 04 I like the types of courses offered here.
- ☐ 05 I have heard that the faculty is primarily interested in teaching.
- ☐ 06 I think I will like the social atmosphere here.
- ☐ 07 I like the fraternity/sorority system here.
- ☐ 08 There are opportunities here to get into social issues.
- ☐ 09 I like the racial or ethnic mix of students here.
- ☐ 10 I like the coed ratio here.
- ☐ 11 A coach advised me to come here.
- ☐ 12 A high school teacher or counselor advised me to come here.
- ☐ 13 An alumnus of this college advised me to come here.
- ☐ 14 My parents or relatives wanted me to come here.
- ☐ 15 I have friends here.
- ☐ 16 Someone from my school (not a close friend) advised me to come here.
- ☐ 17 I was offered financial aid.
- ☐ 18 I liked the amount or type of aid offered.
- ☐ 19 I was offered a job on campus or nearby.
- ☐ 20 The total cost was about right for me.
- ☐ 21 I wanted to live at or near home.
- ☐ 22 I wanted to be far away from home.
- ☐ 23 I like this part of the country.
- ☐ 24 I like the rural, urban, or suburban location.
- ☐ 25 I was impressed by the dormitories and other living arrangements.
- ☐ 26 I like the range of student services offered.
- ☐ 27 I like the beauty and style of the campus.
- ☐ 28 I like the academic facilities (computer, library, performing arts, labs, art studios).
- ☐ 29 I like the athletic reputation of this college.
- ☐ 30 I like the athletic programs and/or facilities here.
- ☐ 31 A representative of this college sold me on it.
- ☐ 32 My contacts with admissions personnel were especially favorable.
- ☐ 33 I was not accepted at my first-choice college.
- ☐ 34 Other (please specify)

_____

_____

_____

_____

_____

_____

_____

Indicate by writing in the item number which of the above reasons was **most** important in your decision to come to this college ____.

3 Below is a list of different undergraduate major fields grouped into general categories. Write a "1" next to your probable field of study. Write a "2" next to your second choice if you have one. If you mark "Pre-Law" or some other pre-professional program use the "2" to indicate the actual undergraduate major you are likely to pursue.

Arts and Humanities
- __ 101 Art, fine and applied
- __ 102 English (language and literature)
- __ 103 History
- __ 104 Journalism
- __ 105 Language and Literature (Foreign language, not English)
- __ 106 Music
- __ 107 Philosophy
- __ 108 Speech and Drama
- __ 109 Theology or Religion
- __ 110 Other Arts and Humanities

Biological Science
- __ 201 Biology (general)
- __ 202 Biochemistry or Biophysics
- __ 203 Botany
- __ 204 Marine (Life) Science
- __ 205 Microbiology or Bacteriology
- __ 206 Zoology
- __ 207 Medical Technology
- __ 208 Other Biological Science

Business
- __ 301 Accounting
- __ 302 Business Administration (general)
- __ 303 Finance
- __ 304 Marketing
- __ 305 Management
- __ 306 Secretarial Studies
- __ 307 Other Business

Education
- __ 401 Business Education
- __ 402 Elementary Education
- __ 403 Music or Art Education
- __ 404 Physical Education or Recreation
- __ 405 Secondary Education
- __ 406 Special Education
- __ 407 Other Education

Engineering
- __ 501 Aeronautical or Astronautical Engineering
- __ 502 Civil Engineering
- __ 503 Chemical Engineering
- __ 504 Electrical or Electronic Engineering
- __ 505 Industrial Engineering
- __ 506 Mechanical Engineering
- __ 507 Other Engineering

Physical Science
- __ 601 Astronomy
- __ 602 Atmospheric Science (including Meteorology)
- __ 603 Chemistry
- __ 604 Earth Science
- __ 605 Marine Science (including Oceanography)
- __ 606 Mathematics
- __ 607 Physics
- __ 608 Statistics
- __ 609 Other Physical Science

Professional
- __ 701 Architecture or Urban Planning
- __ 702 Home Economics
- __ 703 Library or Archival Science
- __ 704 Nursing
- __ 705 Pharmacy
- __ 706 Pre-dental, Pre-medicine, Pre-veterinary
- __ 707 Therapy (occupational, physical, speech)
- __ 708 Pre-law
- __ 709 Other Professional

Social Science
- __ 801 Anthropology
- __ 802 Economics
- __ 803 Geography
- __ 804 Political Science (government, international relations)
- __ 805 Psychology
- __ 806 Social Work
- __ 807 Sociology
- __ 808 Other Social Science

Technical
- __ 901 Building Trades
- __ 902 Data Processing or Computer Programming
- __ 903 Drafting or Design
- __ 904 Electronics
- __ 905 Mechanics
- __ 906 Other Technical

Other Fields
- __ 1001 Agriculture
- __ 1002 Communications (radio, T.V., etc.)
- __ 1003 Computer Science
- __ 1004 Forestry
- __ 1005 Law Enforcement
- __ 1006 Military Science
- __ 1007 Other Field

__ 1101 UNDECIDED

4 What is the highest academic level or degree that you intend to obtain? Check one.

- ☐ 01 Some college or Associate degree.
- ☐ 02 B.A., B.S., or other bachelor's degree.
- ☐ 03 Masters or equivalent professional degree. (Usually 1 or 2 years in addition to the bachelor's degree.)
- ☐ 04 Ph.D., M.D., Law, or equivalent advanced degree. (Usually 3-5 years in addition to the bachelor's degree.)

Appendix B. Description of Variables

The following selected variables are numbered according to the list on pages 58–61.

9. High school rank. This variable was derived from senior class position and size, decile, or GPA, in that order of preference. If position in class and class size were available, rank was computed by first computing the percentile rank:

$$\text{PR} = \left(1 - \frac{\text{position}}{\text{class size}}\right) \times 100.$$

Then PR was standardized such that, over all nine institutions, a mean of 50 and a standard deviation of 10 were obtained. If either position or class size was unavailable, decile position was used and standardized. If neither of the preferred two methods was possible, a last resort was to compute school rank for GPA – first transformed to an approximate percentile rank and then standardized with a mean of 50 and a standard deviation of 10.

10. SAT average. (SAT-V + SAT-M)/2, or ACT conversion. ACT scores were converted to an equivalent SAT average using the following table developed by Astin (1971):

ACT	*SAT-T*	*ACT*	*SAT-T*	*ACT*	*SAT-T*	*ACT*	*SAT-T*
1	24	10	31	19	43	28	62
2	24	11	32	20	45	29	68
3	25	12	33	21	46	30	68
4	26	13	33	22	49	31	71
5	27	14	35	23	50	32	75
6	28	15	36	24	52	33	77
7	28	16	38	25	55	34	78
8	29	17	39	26	57	35	78
9	30	18	42	27	60		

13. Academic composite. An equally weighted composite of SAT average (variable 10) and school rank (variable 9) normalized with mean of 50 and standard deviation of 10.

14. Academic honors. Honors or awards reported by students were classified into three levels (see Table B.1 for examples):

A Outstanding – high placement in national competition or winner in major state competition.
B Very good – high place in state competition or winner in very selective local competition.
C Good – high place in local competition.

The scale used for rating academic honors reflected the level and, to a lesser degree, the number of honors and awards reported. The scale was defined as follows:

5 (A + B) – one type A and at least one type B honor reported.
4 (B + B) – two (or more) type B honors reported.
3 (B + C, or C + C) – one type B and one (or more) type C, or two or more type C honors reported.
2 (C) – at least one type C honor reported.
1 No honor or award reported.

15–18. Extracurricular achievement. Ratings of extracurricular achievement were based on the level of achievement or accomplishment implied by the activity. The extracurricular activities were divided into four categories: community activities, athletic achievement, school leadership, and creative talent. See Table B.2 for examples. Within each of the four categories, ratings were given according to the following guidelines:

5 Unusual individual achievement, more than local recognition.
4 Special local achievement or member of a widely recognized group.
3 Achievement beyond simple participation.
2 Participation.
1 Nothing cited.

19. Follow-through. This rating involved evidence of purposeful, continuous commitment to certain types of activities versus sporadic efforts in diverse areas. The rating guidelines were as follows:

5 Evidence of at least two instances of multiple-year involvement in an activity, with advancement and achievement (e.g., three to four years in student government going from representative to president, or sports participation up to team captain or notable achievement).
4 Evidence of at least two instances of multiple-year involvement with unusual success and/or advancement demonstrated in one of the instances.
3 Evidence of multiple-year involvement in at least two areas with moderate success (e.g., to varsity level in two sports).
2 Some evidence of multiple-year involvement but without indication of advancement and/or success.
1 No evidence of multiple-year involvement.

20 and 21. Work experience. Work experience was rated in two different categories: (1) extent (amount of time spent working) and (2) level (degree of competence or skill needed and degree of growth or advancement). The extent scale (variable 20):

5 Full time, two summers, *and* part time during at least one year.
4 Full time, one summer, *and* part time during one or two years *or* part time throughout high school.
3 One summer full time or extensive part time.
2 One summer part time only, or odd jobs.
1 No work experience.

Table B.1 Academic Honors

Type	*Scholarship*	*Contests, Prizes, Awards (art, science, literary)*	*Special Selection*
A	National Merit Scholarship finalist or semifinalist	1st to 3rd place winner or a national or statewide contest	
B	Valedictorian Salutatorian National Merit letter of commendation	Winner of high place in statewide contest Winner of schoolwide contest or scholarship Brown/Williams/other book award	Selection as an exchange student American Field Service
C	Blue Key, Gold Key (local honor societies) Honor roll, Dean's list, etc. National Honor Society CSF – California Scholarship Federation Beta Club Arista	High place (but not first) in schoolwide contest Headmaster's award	School representative to regional science conference Selection as tutor *Who's Who in American High School Students* Society of Distinguished American High School Students, etc.

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Table B.2 Examples of Extracurricular Activities

Variable	2	3	4	5
15. Community activities	Student community involvement program Church youth group Political activities Parish aide First-class scout Boosters (honorary service organization)	Big Brothers (planning committee) Walk for Ignatius (student coordinator) Volunteer work (certificate of merit) Christian Education Committee (Sunday school teacher) Boosters leadership Minor officer of groups Star scout	4-H (treasurer, county level) American Field Service (president) Tri-ship Boys' Club (head) Bloodmobile (jr. cochairman) Special awards or prizes Life scout	Eagle scout 4-H (state president) Special service award (only a few awarded in state or area)
16. Athletic achievement	Intramural sport or comparable community sport	Varsity sport or comparable local team	Member of championship team Team captain/cocaptain Local individual awards (1st place) Expert Instructor	Individual winner in regional or state meet State or regional ranking
17. School leadership	Member of clubs (language, math, pep) School paper (staff)	Member of selective clubs/teams Debate team Student council President of minor clubs Homecoming (chairman) Lower officer of major activities Spring arts festival (principal) Cheerleading Manager of teams Student radio (anchorman) Paper/yearbook (writer)	Founder of activities President of student council School activities award Editor/coeditor Gold key Model UN (president, chief delegate)	State or regional officer Highly selective regional award Scholarship recognizing leadership Boys'/girls' state, national or state leadership

Table B.2 Continued

Variable	2	3	4	5
18. Creative talents	Playing instrument Singing Jewelry making Dancing	Band or chorus member Dramatics and music competition Ceramics teaching assistant Artwork – public display by artist	Band or chorus – all state Local prize for art, music, writing Artwork – limited local showing Lead tenor	Maryland state solo State or regional prize/award Work selected for publication, showing, or other recognition at state or regional level

Note: 1 – nothing cited; 2 – participant; 3 – achievement beyond simple participation; 4 – special local achievement or member of widely recognized group; 5 – unusual individual achievement, more than local recognition.

The level scale (variable 21) was dependent on the highest level job, provided it was not a very short-term odd job. Ratings were assigned according to the skills needed or developed for or during work as follows:

5 Work involving demonstrated competence at an advanced level, clear responsibility, or impressive entrepreneurial effort.
4 Work requiring some prior skill and/or training beyond what can be acquired on the job, some responsibility, or some entrepreneurial effort.
3 No need for specific skills but some developed on the job.
2 Little prior skill required or developed on the job.
1 No work.

22. *Statement—writing.* The writing rating was based upon the Common Application form personal statement. The minimum competence reached in any of the columns of the following table was the primary basis for the rating. Columns to the left were used mainly to distinguish among low ratings (1–3); columns to the right were used to distinguish among high ratings (3–5).

	Usage: spelling, agreement, punctuation	*Grammar, Diction: choice of words, sentence structure*	*Unity: paragraphing, transition, theme*	*Style: use of wit, irony, or illustrations; forceful or sensitive as appropriate*
5	Almost no errors	Good expression	Persuasive partly because of very good thematic development	Impressive style
4	Almost no errors	Good expression	Coherent theme, good transition	Competent but not impressive
3	Few errors	Some awkward words and phrases, repetition	Some evidence of theme and transition	Dull or questionable use of language in context
2	Some obvious errors	Frequent awkwardness	No clear point or focus	
1	Many errors			

23. *Statement—content.* This was a rating of the extent to which the personal statement presented persuasive evidence of outstanding personal qualities not represented elsewhere, or an important amplification of other information in the application. The scale guidelines were as follows:

5 Unusual and outstanding. Convincing evidence provided about the unique, unusual, or outstanding nature of the activity, ideas, personal relationships, or whatever was written about.
4 "Almost a 5."

3 Some evidence of personal qualities beyond routine reporting of activities, interests, or experiences.
2 "Almost a 1."
1 Inadequate descriptions, or trivial activities, interests, or experiences.

24 and 25. School report and teacher reference ratings. In rating these, it was considered extremely important to separate the teacher's or counselor's individual style from the content of his or her evaluation. Some teachers tended to be more effusive than others who were more formal and concise. It was believed that such differences should not affect the rating given. The following rating guide was used:

5 Very strong superlatives used with respect to personal qualities. Unusually enthusiastic recommendation that can be attributed primarily to personal qualities rather than to academic qualities. Includes evidence of special effort by rater to convince reader of the high degree of support expressed.
4 "Almost a 5" but not quite.
3 Flat, no reservations, but not enthusiastic either.
2 "Almost a 1" but not quite.
1 Clearly stated reservations concerning personal qualities.

In making these judgments, it was impossible to separate fully the academic and nonacademic aspects of the evaluation. The assumption was, however, that the students' academic record and test scores speak for themselves, so the primary interest was the personal qualities reflected in the teacher or school evaluation. Thus, a student did not receive a very high rating simply because the teacher felt the student was brilliant. Similarly, "kind remarks" about the personality of an academically marginal student did not warrant a high rating.

The rating represented the overall impression the teacher or counselor was trying to convey. It was also considered important (but difficult) to discriminate between the troublesome student and the mildly negative comment meant to lend credibility to an otherwise outstanding recommendation. For the teacher evaluation on the Common Application form, the teacher's ratings as well as his or her narrative comments were taken into consideration.

29. Ethnicity. The number of applicants in each group is given in parentheses after each entry.

1 American Indian, Eskimo, or Aleut (21).
2 Black or Afro-American (635).
3 Asian/Oriental American (271).
4 Spanish American (including Puerto Rican) or Chicano (204)
5 White (21,280).
6 Other (591).

30. Minority student. While it is desirable to analyze individual ethnic groups whenever possible, sample sizes were not adequate for ethnic breakdowns in the college-by-college analysis undertaken in this study. Since the

main interest was how underrepresented groups generally fare in admissions, minority student was here defined to include American Indian, black, and Spanish American students. Note, however, that selection and freshman performance residuals were estimated for the latter two groups on the basis of pooled results across colleges. See the discussion of Tables 6.4 and 9.3.

31. Disadvantaged. This was defined as an aid applicant with both parents having occupation codes (variable 42) of three or less.

33. Recruiting state. Institutions provided lists of states coded as 1 = heavy recruiting, 2 = new recruiting effort, 1 = no special effort.

35. Region. Region Zip codes were listed as follows:

35.1 West: 590–599, 800–999.
35.2 Midwest: 430–699.
35.3 South: 197–427, 700–799.
35.4 Northeast: 010–196.

36. Distance.

36.1 Commuting distance.
36.2 Less than 150 miles.
36.3 150–400 miles.
36.4 Greater than 400 miles.

37. High school type.

37.1 Public.
37.2 Private.
37.3 Parochial.

39. School size.

39.1 Fewer than 50 students in senior class.
39.2 51–100 students in senior class.
39.3 101–200 students in senior class.
39.4 201–500 students in senior class.
39.5 More than 500 students in senior class.

40. Family status.

40.1 Living with both parents.
40.2 Living with surviving parent.
40.3 Living with separated parent.

42. Parent occupation. Occupation level of father or mother, whichever was higher according to the following parent occupation codes:

42.1 Laborers and lower level service workers.
42.2 Service workers, lower level crafts and operatives.
42.3 Clerical, crafts, and kindred.

42.4 Lower level professional, managerial, technical.
42.5 Middle-level professional, managerial.
42.6 High-level professional, appointed or elected officials, managerial.
42.7 Very-high-level professional, appointed or elected officials, managerial (this category defined as prominent parent in several analyses).

43. *Parent education.*

43.1 Not high school graduate.
43.2 High school graduate.
43.3 Some postsecondary (no degree).
43.4 Associate degree.
43.5 Baccalaureate degree (B.A., B.S.).
43.6 Master's degree (M.A., M.S.).
43.7 Doctorate (Ph.D., Ed.D., M.D., L.L.B., D.D.S., D.D.) (this category defined as highly educated parent in several analyses).

44. *Parent college.* College or college type attended by parents according to the following parent college codes:

44.0 No information.
44.1 No college.
44.2 Other, nonselective college.
44.3 Selective college (parent from selective college).
44.4 This college (parent from selective college).

45. *Socioeconomic level.*

$$\text{SES} = 10\left[A\frac{x_1}{s_1} + B\frac{x_2}{s_2} + C\frac{x_3}{s_3} + D\frac{x_4}{s_4}\right] + 50$$

where

x_1 deviation score of higher of mother's or father's education,
x_2 deviation score of higher of mother's or father's occupation,
x_3 deviation score of aid applicant,
x_4 deviation score of higher of mother's or father's college,
s_1 standard deviation of x_1,
s_2 standard deviation of x_2,
s_3 standard deviation of x_3,
s_4 standard deviation of x_4.

Missing data rules:

1. If no data missing, $A = 2, B = 2, C = 1, D = 1$.
2. If x_3 or x_4 missing, $A = 3, B = 3$.
3. If x_1 or x_2 missing, SES not computed.

96. *Probable major—at time of application.* Probable major given in the Common Application form was coded by major field codes of Question 4 of the entrance questionnaire.

98. Probable career. Probable career given in the Common Application form was coded according to the following categories:

1 Business
2 Public administration
3 Professional
4 Scholarly
5 Technology
6 Service occupations
7 Artistic
8 Undecided

99. Statement—orientation.

1 Career—*My goals and accomplishments* in academic work, work experience, special talents, career interests. Practical, task oriented.
2 Intellectual—*My ideas* concerning social problems or issues. Oriented toward values, service, ethics.
3 Personal—*Me as a person:* interpersonal relations, personal development in physical, athletic, or leadership situations; personal experiences.
4 Mixed—two or more of the above, although an intellectual orientation was given priority whenever it appeared.

100–111. Spring goals—importance. In the spring questionnaire, students were asked again to rate (from 1 to 5) the importance of the same educational goals listed in Question 1 of the fall questionnaire.

112–123. Spring goals—progress. In the spring questionnaire, students were asked to rate their progress on educational goals as follows: "Listed below are the same goals described in Question 1. To what extent do you feel satisfied with the progress you have been able to make here on these particular goals? Please circle satisfied or dissatisfied next to each goal as you feel appropriate. If you are not sure, circle 'not sure.'"

124–136. Spring view of reasons. In the spring questionnaire, students were asked to evaluate their original reasons for coming to this college as follows: "Back in September entering freshmen were asked to respond to the statements below to indicate what considerations influenced their decision to come to this college. Students checked whichever items seemed important to them at that time. Having had some experience here and knowing what you now know about college, you may have a somewhat different view than would an entering freshman. Do some of these items strike you as particularly good or poor reasons for coming to this college? If so, circle G (good) or P (poor) as appropriate. Mark only those few that seem especially important."

139. Goal progress—composite. The goal progress composite (GPC) was computed as follows: Using only those goals that had been considered important in the Fall, each was scored + or − depending on the students' answers in Questions 124–136 above. The GPC was then the algebraic sum of these scores divided by the number of such scores. Thus, the GPC ranged from +1.0 to −1.0. Students with GPCs above .5 were classified as "mainly satisfied;" those with negative scores were classified as "mainly dissatisfied."

Appendix C. Technical Notes

1. Family Educational Rights and Privacy Act of 1974. Department of Health, Education and Welfare Final Rule on Educational Records, 45 C.F.R.S. (a).(6) 41 *Federal Register* 24662 (June 1976).

2. A large amount of tabular material was produced by this study. Only those tables of particular interest were included in the text and appendixes of this book. An unpublished Technical Supplement is available from Warren W. Willingham, Educational Testing Service, Princeton, New Jersey 08541. It includes specifications for a few measures in addition to the following tabular material:

- Applicant profiles (similar in style to those in Appendix Tables D.1 and D.2) based on admissions status, family background, geographic area, home state, degree objectives, overall college ratings, and characteristics flagged by admissions staff.
- Correlation coefficients for 40 preadmission measures.
- Comparison of College Board Summary Report data for applicants to the nine participating colleges and to four-year public and private institutions.
- Raw score weights for linear and logistic regression of admissions action on the SAT and high school rank.
- Raw yield comparisons based on application variables, academic variables, geographic variables, background variables, and goals and interests.
- Characteristics of freshmen compared with those who responded to the fall and spring questionnaires.

3. Personal achievement measures in this and a number of analyses by college were based on random samples of 500 applicants within each college (since foreign applicants were routinely omitted, actual numbers were typically 480–490). Thus, percentages shown for these variables are estimates. A 95 percent confidence interval around these estimates would range from approximately ±2 percentage points for small or large percentages (10 percent, 90 percent) to approximately ±4 percentage points for percentages near 50 percent. Note that these intervals should be interpreted as upper bounds, since the sample and populations do not differ substantially in size.

4. In the logistic model, the probability of acceptance of any given applicant is expressed as

$$P_a = \frac{1}{1 + e^{-XB}}$$

where X = the vector of independent variables and B = the vector of logistic coefficients. Maximum likelihood estimation procedures are then used to determine the logistic coefficients. The specific procedures used follow those described by Walker and Duncan (1967). Multivariate normality was not assumed, and a conditional likelihood approach of the type advocated by Press and Wilson (1978) was used. For discussion of linear and logistic prediction of a dichotomous criterion, see Nerlove and Press (1973) and Goodman (1976).

5. None of these institutions has a policy of routinely rejecting all applicants whose academic credentials fall below some arbitrary point. The logistic curves of Figure 6.3 suggest that admissions practices were consistent with policy in this regard, although such smooth functions based on a composite academic measure could conceal *de facto* cutoffs on individual measures. To examine that possibility, the observed percent of applicants accepted was plotted in relation to SAT and HSR separately for each college. These data presented the same picture—a progressive decline in likelihood of acceptance as SAT or HSR declined. No one of the 18 curves showed an abrupt drop in acceptance rate at any score level. All nine colleges accepted some students with SAT scores in the 300s; all accepted some students even in the bottom 1–2 percent of the distribution of applicant test scores for that college. Needless to say, these results apply only to the nine participating colleges. Among public institutions there have been well-known instances of mandated cutoffs, particularly on high school performance.

6. Both linear and logistic regression analyses were performed for all colleges. The pattern of raw score weights was almost identical for the two methods. (See Table T.11 in the Technical Supplement.) Linear raw score weights are reported here since they provide a more familiar interpretation of the level of prediction and are directly comparable to regression weights reported later that indicate the relative validity of these measures in forecasting freshman grades. The HSR weights were increased by a factor of 10/8.7 in order to adjust for an arbitrary scale difference in the standard deviation of HSR and SAT in the total pool of applicants.

7. In this report correlations between continuous and dichotomous (scored 0–1) measures are point-biserials unless otherwise noted. Since the upper limit of the point-biserial never reaches 1.0 and also varies with the proportional split of the 0–1 variable (here the accept rate), this coefficient may give a spuriously low impression of the extent to which selection decisions are predictable and an inaccurate view of the relative predictability from college to college. Since the biserial coefficient has an upper limit of 1.0 when assumptions are met, and does not vary with the accept rate, it is shown in Table 6.1 for comparison.

8. In this study there are several critical points at which we wish to make some estimate of the weight or influence different measures have in forecasting a subsequent event: in Chapter 6 to examine what influences colleges' selection decisions, in Chapter 7 to determine what is associated with student decisions to enroll at particular colleges, and in Chapter 9 to understand what student characteristics predict later success. Regression analysis is the common and convenient approach to this problem, although the most appropriate form is less clear. First-order correlations offer a direct and manageable interpretation, but they may be confusing or even misleading because an individual coefficient may represent the confounding effects of several measures. Multiple regression coefficients help to disentangle the confoundment, but such independent weights are statistical abstractions that may have little obvious connection with the decision process or performance evaluation they are intended to represent.

While there is no completely satisfactory solution to this dilemma, we chose to use residual analysis because we believe it minimizes the interpretative problems and provides, on several grounds (see pages 77–79), a more useful and heuristic representation of the real situation. There are, however, advantages to multiple regression, especially in clarifying the confoundment issue. Table D.14 in the Appendix shows a detailed analysis of freshman performance as related to 25 preadmission measures. This table gives a generally similar picture as the analyses reported in Chapter 9, namely, that academic performance in college is mainly forecast by traditional evidence of academic achievement.

Analysis of the independent influence of different personal qualities on the admissions decision is complicated by the fact that the criterion is dichotomous. Table D.3 shows raw-score regression weights for six dichotomous predictors; that is, whether or not the applicant has these characteristics: (1) an SAT score above the average for the applicants to the college, (2) an above-average high school rank for the same group, (3) any special academic recognition (valedictorian or a rating of 4 or 5 on academic honors), (4) any unusual personal achievement (a rating of 5 on community activity, athletic achievement, leadership, creative talent, work level, or personal statement content), (5) an unusual school or teacher reference (rating of 5), or (6) membership in a special interest group (minority, alumni parent or sibling). The weights shown can be interpreted loosely as the extent to which an applicant's having any of the six characteristics will increase his or her probability of being admitted. Thus, summing the six weights and the constant gives the probability of admission for an applicant who has all six characteristics. Similarly, the constant alone gives the probability of admission for an applicant who has none (i.e., a zero score on each characteristic).

In addition to these interesting features, several aspects of Table D.3 deserve attention: (1) The multiple regression analysis is useful in indicating which measures have a significant independent influence on admissions decisions. (2) The analysis gives an indication of the relative weight each characteristic has in differentiating among selected and rejected applicants in individual institutions. (3) On the other hand, the weights are not directly comparable from college to college because of large differences in the selection rate across colleges. (4) Similarly, the weights do not necessarily give an accurate view of the absolute importance of a measure in admissions at a given college. For example, Figure 7.4 shows that academic achievement is important in admission to Kalamazoo despite the low weights on test score and high school rank in Table D.4. This latter fact further illustrates that the high average ability of Kalamazoo freshmen is due largely to self-selection rather than institutional selection. (5) Also, the equations of Table D.3 do not yield accurate statements of selection probability for individuals or groups with especially high or low likelihood of admission because the linear model does not faithfully fit the 0–1 criterion. Note that at most colleges a positive score on all characteristics yields a probability of admission greater than the real upper limit of 1.0.

The multiple regression analyses and the residual analyses show a generally similar pattern of influence on admissions decisions associated with the various characteristics we have examined. In one sense, Table D.3 overemphasizes somewhat the apparent influence of the personal qualities shown because

they represent relatively small groups, while SAT scores and high school rank are split at nearly the median (i.e., the latter come into play more often). Finally, Table D.3 provides an informative illustration of the strengths and weaknesses of linear regression when the criterion is dichotomous.

9. Outstanding interview had a significant selection residual in seven colleges (see Table 6.3). In order to determine whether or not the interview had an independent effect on the admission decision, the analysis reported in Table D.3 was repeated with outstanding interview as an additional unusual attribute. In this multiple regression analysis the previously noted significant effects vanished in four of the seven colleges.

On the other hand, taking account of unusual applicant attributes did not diminish the significant association between outstanding interview and admissions decisions at Bucknell, Colgate, and Williams. Furthermore, addition of the interview rating did not materially change the other significant regression weights for these three colleges as shown in Table D.3. Thus, at these three institutions an outstanding interview may well be another basis for choosing among a surplus of qualified applicants, although it is impossible to say to what extent the interview rating is simply contaminated with the admissions decision. Also, the actual number of applicants receiving such outstanding ratings varied considerably at the three colleges. (See page 83.) Finally, it is important to note that coming for an interview did not, in itself, influence admissions decisions; that is, when added to the multiple regression analyses, that variable did not have a significant weight for any college.

10. Note in Table 6.6 that the institutions with many students in the low zones (Bucknell, Colgate, and Williams) are also those with the largest residuals. This suggests that there is a partial confoundment of the zone phenomenon with institutional selectivity. Is it more correct to assume that the more selective colleges have larger residuals because they have more applicants in the lower zones, or is it more correct to assume that the lower zones have larger residuals because that is where colleges that attend to personal qualities have the most applicants? In a sense these questions reflect two views of the same phenomenon because a high rate of accepting applicants necessarily imposes a ceiling on the degree of preferential selection that can be exercised. But the fact of larger residuals in the lower zones is not merely a result of applicants to different colleges being loaded in different zones because, in varying degree, there were significant differences across zones in each colleges' selection decisions. Furthermore, the size of the residuals does not predictably increase from high to middle to low zones. Rather, the pattern of significant residuals in Table 6.6 and within the data of individual colleges appears to reflect admissions policy considerations whereby different types of students receive preference in different zones.

11. HSR weights were increased by a factor of 10/8.7 to adjust for an arbitrary scale difference in the standard deviation of the two measures in the total pool of applicants. Thus, for purposes of evaluating the predictive effectiveness of HSR and SAT, the weights are as comparable as would be standardized weights. Use of the same comparable scales in predicting selection and freshman grades tends to avoid the main effects of restriction in range associated

with college selection. It does not account for the effects of self-selection or the unknown, though likely small, restricting effects of other measures that may operate as explicit selection variables.

12. Analyses in Table 9.6 involving more than one predictor are multiple correlations unless otherwise indicated. Coefficients on lines 11 and 12 are shrunken to correct for inflation due to greater capitalization on chance when many variables are included. Lines 7–10 and 11 and 12 are based on reduced samples with complete data for all measures in those analyses.

13. The fact that this group of dropouts includes some students who are actually stopouts may not be a very serious problem from a research standpoint. Astin's data (1975) indicate considerable similarity between stopouts and dropouts.

14. One other analysis was undertaken on the possibility that dropouts might be more predictable from preadmission information if more reliable composite measures were used. Accordingly, within each college, the dropout rate was compared for those students who scored above and below average on each of the nine orientation factors described in Chapter 8. A few effects were statistically significant but not of practical consequence; only uncertain goals showed some association with freshman attrition in more than one college.

Appendix D. Tables

Table D.1 Applicant Profiles – Preadmission Characteristics and Achievements[a]

Nonoverlapping Sample – Information from Admissions Folders	*All Applicants*	*Sex*		*Minority Students*	*Age 18+*	*School Type*					*Close-Tie School*
		M	*F*			*Private*	*Parochial*	*Public Small*	*Public Medium*	*Public Large*	
Admissions status											
Accepted	65%	63%	67%	69%	65%	58%	69%	72%	69%	63%	67%
Enrolled	27	26	28	27	28	21	31	25	30	28	28
Aid applicant	40	42	38	77	35	22	49	39	46	51	31
Came for interview	34	33	36	20	34	37	27	31	34	34	37
Academic achievement											
Valedictorian	4	3	4	2	3	2	4	15	4	3	1
High academic honors	8	8	8	8	6	5	9	8	9	9	6
School rank											
1st decile	32	27	38	26	20	12	29	30	39	45	20
2nd decile	19	19	19	20	15	12	23	20	21	22	17
3rd decile	14	15	14	17	15	15	13	14	14	13	15
4th decile	10	11	10	10	12	13	14	13	9	9	13
5th decile	7	8	7	10	7	12	7	6	6	5	8
Below 5th decile	17	21	13	18	29	36	14	17	11	8	26
SAT average											
700–800	3	4	2	1	3	3	1	3	3	4	3
600–699	23	26	20	11	17	20	19	19	25	26	20
500–599	43	41	44	21	38	46	48	34	41	43	43
400–499	25	24	26	39	31	26	25	38	24	22	28
Below 400	6	5	6	28	11	6	6	5	6	5	6
High personal achievement											
Community activities	6	8	4	1	6	3	4	9	8	7	7
Athletic achievement	31	37	23	27	34	33	36	31	31	25	32
School leadership	17	16	18	13	14	15	15	21	18	15	12
Creative talent	13	11	15	9	10	10	8	12	15	14	11
Follow-through	15	16	14	10	13	15	13	19	17	12	13

Continued on next page

a. This table is based on a nonoverlapping sample of 3,889 applicants as described on page 62. Smaller samples were available for teacher references as indicated. Each entry represents the percentage of applicants in that column with the characteristic in that row.

Table D.1 Continued

Nonoverlapping Sample – Information from Admissions Folders	*All Applicants*	*Sex*		*Minority Students*	*Age 18+*	*School Type*					*Close-Tie School*
		M	*F*			*Private*	*Parochial*	*Public Small*	*Public Medium*	*Public Large*	
Work extent	12%	14%	8%	6%	17%	14%	9%	11%	10%	12%	14%
Work level	7	7	7	3	6	7	3	6	7	8	9
Personal statement – writing	4	4	4	1	3	6	2	4	3	4	5
Personal statement – content	7	6	8	5	6	9	3	7	6	7	9
School report	8	7	9	10	7	9	6	8	8	8	8
Teacher report ($N = 1,918$)	10	10	10	16	7	11	9	13	11	10	10
Personal background											
Women	48	0	100	38	31	43	39	53	49	52	45
Minorities	5	6	4	100	4	5	9	4	3	6	4
Parent:											
Alumni parent	4	5	4	1	6	4	4	7	4	5	4
Parent from selective college	34	33	34	5	35	49	14	32	29	28	41
Highly educated parent	24	23	25	12	23	29	18	20	22	23	26
Prominent parent	9	9	9	8	8	12	7	8	7	9	10
Alumni sibling	5	4	5	2	6	4	5	4	5	5	5
Disadvantaged	9	10	8	36	9	3	16	15	11	11	5
School background											
High school type											
Private	25	28	23	23	38	100	0	0	0	0	32
Parochial	5	6	4	10	5	0	100	0	0	0	2
Small public	3	3	4	3	4	0	0	100	0	0	3
Medium public	41	40	42	28	35	0	0	0	100	0	39
Large public	20	19	22	25	15	0	0	0	0	100	18
Close-tie school	23	24	22	16	25	29	8	22	22	21	100
Number in this sample	3,889	2,036	1,852	173	636	987	208	134	1,596	780	885
Percent of total		52	48	4	16	25	5	3	41	20	23

Table D.2 Applicant Profiles – Preadmission College Ratings[a]

Nonoverlapping Sample – Ratings by College Staff	*All Applicants*	*Sex*		*Minority Students*	*Age 18+*	*School Type*					*Close-Tie School*
		M	*F*			*Private*	*Parochial*	*Public Small*	*Public Medium*	*Public Large*	
Academic rating											
5	6%	5%	7%	3%	4%	3%	3%	8%	8%	7%	5%
4	22	20	25	10	16	13	24	20	26	28	22
3	36	36	37	26	33	35	40	39	38	32	36
2	27	30	24	36	34	36	25	28	23	25	30
1	9	10	8	25	13	14	9	6	5	8	8
Personal rating											
5	5	5	5	5	5	4	4	3	7	4	6
4	29	30	29	38	27	23	29	31	32	31	31
3	48	47	49	45	51	50	48	45	47	46	48
2	17	17	16	10	16	21	17	21	13	18	13
1	1	1	1	2	2	1	1	0	1	0	1
Talent flag											
Music, art, literary	9	8	11	3	7	7	5	9	10	10	8
Leadership, entrepreneur	6	7	5	9	5	4	6	4	7	6	5
Science and technology	1	1	1	0	0	0	1	1	1	1	1
Athletic	14	19	8	18	18	13	21	10	16	11	15
Other	1	1	1	2	1	1	0	1	1	1	0
Attribute flag											
Mature and well-directed	5	4	5	3	4	5	2	2	5	4	5
Has overcome hardships	3	2	3	14	4	3	1	2	3	3	3
Significant work experience	2	2	2	1	2	1	1	1	2	3	2
Outstanding references	5	5	5	2	4	5	5	4	5	5	5

Continued on next page

a. This table is based on a nonoverlapping sample of 3,889 applicants as described on page 62. Smaller samples were available for interview ratings as indicated. Each entry represents the percentage of applicants in that column with the characteristic in that row.

Table D.2 Continued

Nonoverlapping Sample—Rating by College Staff	*All Applicants*	*Sex*		*Minority Students*	*Age 18+*	*School Type*					*Close-Tie School*
		M	*F*			*Private*	*Parochial*	*Public Small*	*Public Medium*	*Public Large*	
Strong intellectual orientation	3%	3%	3%	2%	2%	2%	2%	6%	3%	3%	3%
Rich experiences	8	6	10	6	9	8	2	7	8	7	6
Cultural background	5	6	4	52	5	5	5	10	4	6	4
College interest flag											
Important school/community	14	14	14	20	16	18	12	21	12	12	19
Strengthens a tie	6	6	7	3	8	7	5	7	6	7	7
Fits enrollment need	1	1	2	1	2	1	0	3	2	1	1
Interview rating (N = 1,330)											
Outstanding	15	13	17	29	12	12	19	24	13	17	16
Good	45	45	46	44	39	38	49	45	48	48	43
Other	40	42	38	26	49	50	32	31	38	35	41
Number in this sample	3,889	2,036	1,852	173	636	987	208	134	1,596	780	885
Percent of total		52	48	4	16	25	5	3	41	20	23

Table D.3 Independent Effect on Probability of Admission Associated with Five Characteristics – Each Scored Yes–No[a]

	Raw Score Regression Weights						
	Above Average		*Special Academic*	*Unusual Personal*	*Unusual*	*Special Interest*	
College	SAT	HSR	*Recognition*	*Achievement*	*References*	*Group*	*Constant*
RIC	.49*	.27*	.15	.12*	.03	.12*	.18
HAR	.18*	.27*	.02	.13*	.03	−.07	.59
KEN	.14*	.28*	.03	.03	.06	.00	.57
OCC	.26*	.30*	−.02	−.01	.09	.06	.45
OHI	.06*	.11*	−.01	.03	.01	−.02	.85
WIL	.10*	.11*	.18*	.07	.07	.32*	.00
COL	.28*	.19*	.28*	.07	.09*	.24*	.02
BUC	.29*	.32*	.29*	.04	−.01	.27*	.00
KAL	.11*	.06*	.01	.03	.03	−.06	.84

a. See technical note 8 for definition of the five characteristics and comments on this analysis, especially its strengths and weaknesses.
* $p < .05$

Table D.4 Freshman Profile – Preadmission Characteristics and Achievements (All Colleges $N = 4,814$)[a]

Preadmission Information	All Freshmen	Sex		Aided Students	Intended Undergraduate Major						
		M	F		Arts & Human.	Nat. Sci.	Bus.	Pre-Med.	Pre-Law	Soc. Sci.	Undec.
Academic achievement											
Valedictorian	5%	4%	7%	8%	5%	9%	2%	10%	5%	4%	7%
High academic honors	9	9	10	15	14	12	2	13	12	8	9
School rank											
1st decile	40	32	49	52	39	56	29	61	43	37	34
2nd decile	19	19	19	20	18	15	20	20	24	19	17
3rd decile	12	13	11	11	16	9	12	8	10	14	12
4th decile	9	10	7	6	8	6	11	3	8	8	10
5th decile	6	7	5	4	6	5	8	2	5	8	8
Below 5th decile	14	18	9	7	13	9	19	6	9	14	18
SAT average											
700–800	4	4	3	6	4	7	1	4	5	4	5
600–699	29	31	27	32	32	40	18	38	33	25	27
500–599	43	42	44	38	43	39	51	44	46	48	39
400–499	21	19	22	21	19	13	25	12	14	20	25
Below 400	3	3	3	4	2	2	5	2	1	4	4
High personal achievement											
Community activities	6	8	4	6	5	7	6	10	11	5	5
Athletic achievement	31	38	24	30	24	29	36	30	29	31	32
School leadership	17	15	20	21	21	15	11	16	30	23	17
Creative talent	13	9	17	14	22	15	7	9	16	13	13
Follow-through	18	17	18	18	18	18	14	18	24	19	15
Work extent	11	14	8	10	10	10	11	12	11	9	10
Work level	8	7	8	5	8	8	6	9	7	8	7
Personal statement – writing	5	4	5	4	8	3	3	5	4	6	5
Personal statement – content	8	8	9	7	12	7	5	8	9	8	9

Table D.4 Continued

Preadmission Information	All Freshmen	Sex M	Sex F	Aided Students	Intended Undergraduate Major: Arts & Human.	Nat. Sci.	Bus.	Pre-Med.	Pre-Law	Soc. Sci.	Undec.
School report	10%	10%	11%	12%	9%	12%	8%	14%	9%	12%	12%
Teacher report ($N = 2,408$)	12	12	13	13	13	12	10	14	12	12	17
Personal background											
Women	47	0	100	49	63	47	37	40	39	56	46
Minorities	4	4	5	12	4	3	3	5	5	6	5
Parent:											
Alumni parent	9	8	9	4	11	7	7	9	7	10	10
Parent from selective college	39	39	39	21	45	35	38	27	35	46	40
Highly educated parent	24	25	24	10	25	30	15	33	25	23	27
Prominent parent	9	10	8	0	7	13	6	19	5	7	11
Alumni sibling	8	8	9	6	7	7	9	6	4	10	9
Disadvantaged	9	9	9	27	8	11	5	13	7	8	6
School background											
High school type											
Private	24	26	20	12	27	20	26	17	19	23	29
Parochial	4	5	3	6	3	4	4	6	6	3	2
Small public	5	4	6	7	4	5	5	4	6	3	5
Medium public	45	44	46	49	43	46	48	47	41	45	43
Large public	19	18	20	22	18	19	16	21	24	23	16
Close-tie school	25	25	24	20	25	23	27	19	21	27	27
Percent of class	100	53	47	31	13	13	12	11	9	13	16

a. Each entry represents the percentage of students in that column with the characteristic of that row. Intended major was based on 4,174 freshmen who returned the fall questionnaire.

Table D.5 Freshman Profile – Preadmission College Ratings (All Colleges $N = 4,814$)[a]

Ratings by College Staff	All Freshmen	Sex		Aided Students	Intended Undergraduate Major						
		M	F		Arts & Human.	Nat. Sci.	Bus.	Pre-Med.	Pre-Law	Soc. Sci.	Undec.
Academic Rating											
5	9%	7%	12%	12%	8%	13%	7%	13%	8%	5%	9%
4	30	28	32	34	28	39	23	38	30	30	27
3	34	33	35	33	39	32	35	34	41	36	34
2	26	31	20	20	24	15	33	14	19	28	29
1	1	2	1	1	1	1	2	1	1	2	2
Personal rating											
5	8	7	10	10	9	9	7	10	10	9	7
4	35	35	36	41	35	34	33	34	34	36	37
3	43	42	44	44	44	48	34	46	44	44	44
2	14	16	11	6	12	10	25	9	12	10	12
1	0	0	0	0	0	0	1	0	0	0	0
Talent flag											
Music, art, literary	9	7	11	13	20	7	3	9	9	9	11
Leadership, entrepreneur	6	7	6	8	5	6	4	6	13	8	6
Science and technology	1	1	1	1	0	2	0	4	0	0	0
Athletic	15	20	8	19	9	14	18	13	13	12	15
Other	1	1	1	1	2	1	1	1	2	2	1
Attribute flag											
Mature and well-directed	6	6	7	8	9	8	3	8	6	7	8
Has overcome hardships	2	2	3	5	2	2	2	2	2	3	3
Significant work experience	2	2	2	2	2	2	1	2	2	3	1
Outstanding references	6	6	6	6	6	6	4	6	8	9	7
Strong intellectual orientation	3	4	3	5	6	6	2	4	4	2	3
Rich experiences	9	7	10	8	13	7	7	7	9	13	10
Cultural background	5	5	5	11	4	4	4	7	5	6	5

Table D.5 Continued

Ratings by College Staff	All Freshmen	Sex		Aided Students	Intended Undergraduate Major						
		M	F		Arts & Human.	Nat. Sci.	Bus.	Pre-Med.	Pre-Law	Soc. Sci.	Undec.
College interest flag											
Important school/community	16%	17%	16%	14%	14%	14%	13%	11%	15%	18%	21%
Strengthens a tie	12	12	13	8	15	10	11	11	11	16	12
Fits enrollment need	2	1	2	2	4	2	1	1	0	1	1
Interview rating (N = 2,163)											
Outstanding	22	20	25	23	26	24	20	27	23	20	23
Good	44	44	43	52	45	44	35	45	41	46	45
Other	34	36	32	25	28	33	45	28	35	34	33
Percent of class	100	53	47	31	13	13	12	11	9	13	16

a. Each entry represents the percentage of students in that column with the characteristic of that row. Intended major was based on 4,174 freshmen who returned the fall questionnaire.

Table D.6 Freshman Profile – Personal Objectives at Beginning of Year (All Colleges $N = 4,174$)[a]

Personal Objectives	All Freshmen	Sex		Aided Students	Intended Undergraduate Major						
		M	F		Arts & Human.	Nat. Sci.	Bus.	Pre-Med.	Pre-Law	Soc. Sci.	Undec.
Reasons for college choice											
General academic reputation	75%	75%	75%	78%	69%	77%	68%	85%	84%	77%	71%
Campus beauty	40	36	45	34	43	38	46	39	41	40	36
Social atmosphere	35	33	37	27	40	33	38	30	39	35	34
Particular academic program	23	21	25	27	24	23	23	28	20	19	15
Area of the country	19	20	19	14	22	20	22	17	18	19	19
The particular location	18	18	19	17	17	23	16	19	16	17	18
Teaching emphasis	16	17	16	17	16	20	10	23	19	18	14
Athletic facilities	16	21	11	14	9	16	23	12	19	15	15
Favorable staff contact	15	14	16	16	16	12	15	15	21	16	15
Rejected elsewhere	12	14	10	5	10	10	14	10	16	14	13
School advice	10	12	9	12	10	11	10	10	10	9	13
Financial aid offer	9	8	10	27	9	12	6	9	9	9	7
Developmental goal considered very important											
Intellectual											
Liberal education	39	32	46	39	56	35	25	39	44	48	37
Intellectual skills	53	54	53	51	51	46	54	48	69	56	53
Moral values	9	7	11	11	14	7	5	9	8	13	6
Social awareness	10	8	13	12	9	9	5	10	15	21	7
Creative talents	22	19	25	24	55	16	9	13	19	20	23
Personal											
Physical development	22	25	18	21	19	20	27	18	23	20	24
Leadership training	31	29	34	30	37	27	33	28	37	35	29
Personal relations	17	18	15	15	21	14	16	15	18	18	17
Social competence	40	37	44	38	40	32	44	35	42	51	41

Table D.6 Continued

Personal Objectives	All Freshmen	Sex		Aided Students	Intended Undergraduate Major						
		M	F		Arts & Human.	Nat. Sci.	Bus.	Pre-Med.	Pre-Law	Soc. Sci.	Undec.
Career											
Professional training	47%	49%	46%	49%	31%	48%	54%	71%	51%	40%	39%
Practical skills	21	19	23	23	22	24	24	19	13	19	22
Career exploration	30	28	31	25	31	30	26	12	21	36	54
Educational plans											
Some college	1	1	1	1	2	0	2	0	0	0	2
Bachelor's degree	23	19	26	20	32	20	38	2	2	19	30
Master's degree	37	35	40	37	46	41	52	2	7	46	43
Ph.D., M.D., Law, etc.	39	45	33	43	21	40	9	95	91	35	25
Career plans											
Business	11	14	8	5	5	4	45	1	7	13	8
Public administration	3	2	3	3	4	0	3	0	5	9	2
Professional	29	31	26	31	22	21	16	74	67	20	16
Scholarly	8	8	8	9	4	32	1	8	2	7	6
Technology	7	9	5	8	2	8	2	2	1	2	7
Service	9	4	15	11	10	5	2	3	3	15	6
Artistic	3	2	4	4	18	0	0	0	1	1	2
Undecided	30	30	30	28	35	30	31	12	15	33	52
Percent of class	100	53	47	31	13	13	12	11	9	13	16

a. Each entry represents the percentage of students in that column with the characteristic of that row. Based on 4,174 freshmen who returned the fall questionnaire.

Table D.7 Freshman Profile – College Experience and Performance at End of Year (All Colleges $N = 4,814$)[a]

College Experience or Performance	All Freshmen	Sex		Aided Students	Intended Undergraduate Major						
		M	F		Arts & Human.	Nat. Sci.	Bus.	Pre-Med.	Pre-Law	Soc. Sci.	Undec.
Reasons for college choice											
Yes, good reason[b]											
General academic reputation	87%	88%	87%	88%	80%	90%	89%	93%	87%	86%	86%
Campus beauty	60	63	58	55	61	57	66	59	59	59	61
Particular academic program	57	56	58	57	49	57	61	61	52	56	49
Teaching emphasis	52	52	51	51	50	52	44	60	56	50	52
Social atmosphere	51	49	53	44	49	50	53	45	52	54	51
Particular location	44	46	43	39	43	47	45	48	45	46	43
Area of the country	40	41	39	36	40	44	42	44	40	39	38
Athletic facilities	33	37	30	28	22	35	41	31	30	31	34
Financial aid offer	31	30	31	58	28	31	23	30	27	27	34
Favorable staff contact	28	29	27	30	28	23	27	29	30	31	27
School advice	24	26	21	23	25	23	26	21	22	21	27
Rejected elsewhere	19	22	15	12	17	16	18	16	17	21	19
Personal goals											
Yes, satisfactory progress[b]											
Intellectual											
Liberal education	66	64	68	66	72	59	64	65	75	74	68
Intellectual skills	59	59	58	59	60	53	60	60	71	60	56
Moral values	39	36	42	43	44	37	34	44	41	42	38
Social awareness	23	23	23	26	23	20	23	22	24	28	23
Creative talents	32	29	35	35	46	28	25	33	30	35	32
Personal											
Physical development	54	58	50	52	49	52	60	55	56	59	54
Leadership training	50	51	49	49	52	48	53	52	56	49	45
Personal relations	43	37	50	43	48	41	46	41	38	48	41
Social competence	69	66	72	64	68	66	71	69	69	75	67

Table D.7 Continued

College Experience or Performance	All Freshmen	Sex		Aided Students	Intended Undergraduate Major						
		M	F		Arts & Human.	Nat. Sci.	Bus.	Pre-Med.	Pre-Law	Soc. Sci.	Undec.
Career											
Professional training	47%	46%	47%	47%	44%	48%	48%	53%	46%	44%	40%
Practical skills	45	42	48	47	40	46	50	48	42	45	46
Career exploration	44	44	45	46	45	44	45	49	43	46	41
Overall goal progress[b]											
Mainly satisfied	41	42	40	40	42	42	45	39	41	40	40
Mixed	48	48	48	49	48	46	45	51	50	49	48
Mainly dissatisfied	11	10	12	11	11	12	10	10	9	11	13
Freshman grade average											
3.5–4.0	11	9	13	13	12	14	10	16	13	9	9
3.0–3.4	27	24	30	28	33	32	21	28	31	28	25
2.5–2.9	29	29	29	27	30	26	32	28	33	31	31
2.0–2.4	21	23	19	21	19	18	24	19	15	22	23
1.5–1.9	9	11	6	9	5	9	9	7	6	7	9
0–1.4	3	4	2	3	2	1	3	2	3	2	3
Other criteria											
Dropout	10	10	10	12	10	8	10	9	6	9	8
Peer nominee	16	16	16	17	17	16	14	22	23	15	15
Percent of class	100	53	47	31	13	13	12	11	9	13	16

a. Each entry represents the percentage of students in that column with the characteristic of that row.
b. Based on 3,405 freshmen who returned the spring questionnaire.

Table D.8 Freshman Profiles by College – Percentage of Freshmen in Each College with Preadmission Characteristic Indicated

Preadmission Characteristic	*College*								
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL
Academic achievement									
Valedictorian	2%	2%	3%	6%	1%	24%	6%	6%	4%
High academic honors	2	2	9	15	1	33	13	7	11
School rank									
1st decile	24	17	25	58	12	72	52	56	50
2nd decile	24	18	19	21	11	13	18	21	27
3rd decile	15	14	15	11	15	7	8	12	12
4th decile	15	11	15	4	11	3	5	6	7
5th decile	8	12	11	3	12	2	3	2	3
Below 5th decile	13	28	14	2	39	3	14	3	2
SAT average									
700–800	0	0	2	3	0	19	7	2	5
600–699	11	7	27	34	8	50	52	42	33
500–599	62	40	55	48	34	25	33	48	42
400–499	26	45	16	12	47	6	6	7	19
Below 400	1	8	0	4	11	0	1	1	1
High personal achievement									
Community activities	7	5	7	7	5	8	8	6	6
Athletic achievement	28	28	27	26	30	35	40	37	25
School leadership	14	12	20	18	11	29	22	17	15
Creative talent	9	10	14	15	10	17	17	13	15
Follow-through	13	14	16	13	12	20	28	26	12
Work extent	10	13	9	7	11	12	10	12	12
Work level	5	7	8	6	7	10	10	9	5
Personal statement – writing	2	2	6	5	3	8	7	7	4
Personal statement – content	4	7	9	8	5	16	10	11	3

Table D.8 Continued

Preadmission Characteristic	*College*								
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL
School report	7%	6%	9%	10%	6%	24%	13%	12%	8%
Teacher report	7	6	–	7	–	24	17	6	–
Personal background									
Women	45	63	42	47	48	43	41	47	47
Minorities	1	2	2	12	4	12	4	3	4
Parent:									
Alumni parent	8	1	10	6	7	16	10	11	5
Parent from selective college	36	37	52	29	47	47	39	37	17
Highly educated parent	20	12	34	25	20	35	27	22	27
Prominent parent	8	5	11	12	8	11	11	8	8
Alumni sibling	9	6	6	7	9	8	7	11	8
Disadvantaged	3	13	4	16	10	7	10	7	17
School background									
High school type									
Private	26	18	41	13	31	33	24	15	9
Parochial	3	5	3	7	3	4	4	4	8
Small public	8	7	1	2	9	2	5	1	4
Medium public	47	49	34	33	41	36	47	54	57
Large public	16	14	20	37	14	13	20	24	18
Close-tie school	11	47	27	13	24	18	25	33	27
N	656	383	382	389	728	458	644	776	398

Table D.9 Percentage of Entering Freshmen Who Considered Particular Reasons Important in Their College Choice (by College)

Reasons	*College*								
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL
General academic reputation	56%	37%	86%	87%	61%	86%	88%	84%	87%
Campus beauty	60	40	41	26	18	38	45	57	25
Social atmosphere	36	34	38	25	34	36	45	40	21
Particular academic program	23	25	14	34	23	10	13	23	48
Area of the country	30	30	6	19	7	37	23	14	8
Particular location	17	19	23	6	12	22	25	24	12
Teaching emphasis	8	12	23	29	11	26	19	9	21
Athletic facilities	15	17	6	9	19	11	19	29	8
Favorable staff contact	15	13	22	18	16	13	10	11	23
Rejected elsewhere	13	11	19	9	18	5	17	11	4
School advice	6	13	17	13	18	10	6	5	12
Financial aid offer	4	12	7	16	13	8	8	4	16

Note. Table is based on 4,174 students who returned the fall questionnaire.

Table D.10 Percentage of Entering Freshmen Who Considered Particular Goals Very Important (by College)

Goal	College								
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL
Intellectual									
Liberal education	28%	32%	40%	44%	30%	61%	47%	32%	42%
Intellectual skills	53	51	51	57	41	64	56	55	54
Moral values	7	7	8	17	4	11	8	7	11
Social awareness	8	12	10	12	9	14	11	6	14
Creative talents	19	28	30	29	19	23	17	15	26
Personal									
Physical development	20	27	12	15	24	32	24	24	14
Leadership training	28	31	25	27	26	43	37	31	34
Personal relations	15	20	17	19	18	20	16	13	14
Social competence	42	46	34	41	39	41	44	41	34
Career									
Professional training	58	52	32	35	57	38	42	53	51
Practical skills	19	21	17	20	18	21	20	25	28
Career exploration	25	30	36	27	31	33	36	26	25

Note. Table is based on 4,174 students who returned the fall questionnaire.

Table D.11 Percentage of Groups of Freshmen Who Scored Above Average on Orientation Factors

Orientation Factor	Intended Major							Other Characteristics					
	Arts & Human.	Nat. Sci.	Bus.	Pre-Law	Pre-Med.	Soc. Sci.	Undec.	Aided Student	Women	Minorities	Disadvantaged	Alumni Parent	Private School
1. Academic Achievement	50%	64%	32%	59%	62%	45%	43%	59%	52%	22%	52%	51%	32%
2. Intellectual goals	58	48	45	59	49	64	53	57	59	70	57	52	50
3. Creative interest	79	48	33	49	45	50	51	54	58	59	49	50	51
4. Athletic interest	41	52	61	53	54	52	53	50	43	40	48	56	58
5. Social interest	54	45	59	57	46	57	51	43	54	39	39	52	56
6. Uncertain goals	63	58	56	47	28	61	76	50	55	45	48	58	65
7. Practical goals	39	56	64	55	71	48	50	56	55	59	63	54	49
8. Nonacademic experience	55	44	49	58	43	51	53	31	44	26	28	49	72
9. Leadership/service interest	52	45	43	61	60	59	47	55	63	60	57	50	42

Note. Table is based on 3,827 students who returned the fall questionnaire and otherwise had complete data.

Table D.12 Percentage of Freshmen Who Felt in the Spring that Previously Endorsed Reasons for Choosing Their College Were Good (by College)

Reasons for College Choice	*College*									*All Colleges*
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL	
General academic reputation	88%	76%	91%	96%	89%	90%	91%	94%	92%	91%*
Campus beauty	82	75	76	60	56	71	68	72	60	72*
Social atmosphere	52	66	48	55	66	66	73	71	41	63*
Particular academic program	75	85	78	86	73	71	70	79	71	76
Area of the country	74	75	–	76	–	63	63	61	–	66
Particular location	60	67	64	–	55	69	58	69	30	62*
Teaching emphasis	53	40	75	82	76	80	64	64	59	69*
Athletic facilities	54	67	–	–	68	63	64	68	–	62*
Favorable staff contact	52	50	61	48	51	50	33	62	42	51
Rejected elsewhere	66	59	53	–	58	–	53	46	–	54*
School advice	–	54	53	36	69	43	–	54	41	51
Financial aid offer	–	83	–	71	88	66	80	76	71	76
All Reasons	71	69	70	75	71	71	72	76	67	72*

Note. No data are reported where the base group marking the reason in the previous fall was less than 25.

* Indicates the percent judging this to be a good reason was significantly different ($p = .05$) from college to college.

Table D.13 Percentage of Freshmen Who Were Satisfied or Dissatisfied in the Spring with Goal Progress (by College)

Goal	College									All Colleges
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL	
Intellectual										
Liberal education	73/10%	71/13%	84/04%	84/07%	71/08%	76/07%	83/09%	74/08%	59/17%	76/09%*
Intellectual skills	66/11	65/16	71/09	64/11	53/19	68/09	63/15	62/11	56/13	63/12
Moral values	54/21	–	–	69/11	–	51/16	68/11	55/09	–	58/14
Social awareness	30/33	39/29	53/32	50/18	25/29	40/42	31/23	37/33	19/57	36/34*
Creative talents	50/32	61/25	52/24	56/22	70/14	47/30	43/35	54/26	50/33	54/27
Personal										
Physical development	80/08	79/06	56/31	72/16	67/21	80/08	79/14	79/12	57/14	74/13*
Leadership training	75/09	63/18	55/24	64/18	57/22	57/17	63/18	64/18	59/17	62/18
Personal relations	46/34	54/19	65/16	36/38	50/21	48/29	62/18	49/21	50/31	51/25
Social competence	70/18	73/13	69/16	78/06	71/14	74/10	82/06	75/08	61/15	74/11*
Career										
Professional training	57/18	56/17	42/21	51/20	56/18	44/18	48/21	53/16	55/19	52/18
Practical skills	63/11	50/17	37/21	60/07	59/20	37/19	64/15	61/05	40/25	54/14*
Career exploration	46/23	43/21	39/17	43/21	50/19	37/20	38/21	36/21	35/30	40/21
All Goals	63/17	61/17	59/17	63/15	60/18	59/15	63/16	61/14	52/21	60/16

Note. Each entry (e.g., 65/12) shows first the percentage of students who were satisfied with their progress, and second, the percentage who were dissatisfied. These percentages are based only on individuals who in the fall viewed the particular goals as very important. No data are reported where the base group was less than 25.

* The pattern of satisfied/dissatisfied was significantly different ($p = .05$) from college to college.

Table D.14 Standard Regression Weights for Measures Predicting Freshman Grade Point Average (by College)

	College								
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL
Academic Predictors									
HSR	.35*	.30*	.29*	.22*	.44*	.38*	.13*	.35*	.36*
SAT	.16*	.31*	.18*	.33*	.16*	.29*	.33*	.24*	.14*
Personal Achievement									
Academic honors	.08	.10	.04	.08	−.06	.03	.11*	−.04	.15
Community activities	.01	.05	−.04	.03	.05	−.05	−.02	.03	.01
Athletic achievement	.04	−.06	.03	−.05	−.01	−.03	−.04	.01	.03
Leadership	−.02	.06	.04	.01	.00	−.01	−.03	−.04	.01
Creative talent	−.06	−.07	−.04	.05	.00	−.03	−.03	−.00	.00
Follow-through	.00	.03	.01	−.01	.09	.09	.05	.09*	.03
Work extent	−.04	−.12*	.07	.01	.05	−.05	−.02	.02	−.04
Work level	.04	.04	−.02	−.04	.02	.07	.07	−.03	.04
Statement – writing	−.01	.11*	.06	.11	.01	.08	.09*	.09*	.08
Statement – content	.01	.04	.02	.04	.05	.00	.07	.05	.11*
School report	–	.09	.02	−.12*	.09*	.02	−.04	.03	–
Teacher reference	–	–	–	.09	–	.05	.05	–	–

Continued on next page

* Weight is significant at .05; *R* corrected for shrinkage.

Table D.14 Continued

	College								
	RIC	HAR	KEN	OCC	OHI	WIL	COL	BUC	KAL
Background Characteristics									
Age	−.10*	−.02	.08	.17*	−.03	.04	.08*	.01	−.03
Sex	.16*	−.02	.22*	−.00	.04	−.00	.20*	.05	−.10
Minorities	–	–	–	−.03	−.08*	−.16*	−.07	–	–
Distance	.04	.03	−.08	.01	−.10*	.04	−.04	−.08*	.02
Private school	.08	.01	−.02	.05	−.05	.07	−.06	−.02	−.01
Close-tie school	.06	.06	.06	.00	.06	.08	.04	.00	.10
Socioeconomic level	.05	.07	.01	.09	.05	.04	−.03	.05	.13*
Alumni ties	−.02	.04	.02	−.00	.07	.04	.01	.02	.03
Interviewed	−.00	−.02	.09	.04	−.03	.03	−.06	.02	−.03
Sent work sample	.03	.02	.05	.04	−.02	–	.00	−.03	.01
Aid recipient	–	.02	.01	−.02	.09*	−.00	−.01	−.00	−.05
Multiple *R*	.49	.58	.48	.55	.62	.65	.54	.49	.59

* Weight is significant at .05; *R* corrected for shrinkage.